SEQUENCE LISTING

<110> Brad St. Croix
Bert Vogelstein
Kenneth Kinzler

<120> ENDOTHELIAL CELL EXPRESSION PATTERNS

<130> 1107.00134

<150> 60/222,599
<151> 2000-08-02

<150> 60/224,360
<151> 2000-08-11

<150> 60/282,850
<151> 2000-04-11

<160> 358

<170> FastSEQ for Windows Version 3.0

<210> 1
<211> 11
<212> DNA
<213> Homo sapiens

<400> 1
catatcatta a 11

<210> 2
<211> 11
<212> DNA
<213> Homo sapiens

<400> 2
tgcacttcaa g 11

<210> 3
<211> 11
<212> DNA
<213> Homo sapiens

<400> 3
tttgcacctt t 11

<210> 4
<211> 10
<212> DNA
<213> Homo sapiens

<400> 4
cccttgtccg 10

<210> 5
<211> 11
<212> DNA

<213> Homo sapiens

<400> 5
ttgctgactt t 11

<210> 6
<211> 11
<212> DNA
<213> Homo sapiens

<400> 6
accattggat t 11

<210> 7
<211> 11
<212> DNA
<213> Homo sapiens

<400> 7
acacttcttt c 11

<210> 8
<211> 11
<212> DNA
<213> Homo sapiens

<400> 8
ttctgctctt g 11

<210> 9
<211> 11
<212> DNA
<213> Homo sapiens

<400> 9
tccctggcag a 11

<210> 10
<211> 11
<212> DNA
<213> Homo sapiens

<400> 10
taatcctcaa g 11

<210> 11
<211> 11
<212> DNA
<213> Homo sapiens

<400> 11
atgtcttttc t 11

<210> 12
<211> 11
<212> DNA
<213> Homo sapiens

<400> 12
gggattaaag c 11

<210> 13
<211> 11
<212> DNA
<213> Homo sapiens

<400> 13
ttagtgtcgt a 11

<210> 14
<211> 11
<212> DNA
<213> Homo sapiens

<400> 14
ttctcccaaa t 11

<210> 15
<211> 11
<212> DNA
<213> Homo sapiens

<400> 15
gtgctaagcg g 11

<210> 16
<211> 11
<212> DNA
<213> Homo sapiens

<400> 16
gtttatggat a 11

<210> 17
<211> 11
<212> DNA
<213> Homo sapiens

<400> 17
ccctttcaca c 11

<210> 18
<211> 11
<212> DNA
<213> Homo sapiens

<400> 18
tgttctggag a 11

<210> 19
<211> 11
<212> DNA
<213> Homo sapiens

<400> 19
aagatcaaga t 11

<210> 20
<211> 11
<212> DNA
<213> Homo sapiens

<400> 20
tctctgagca t 11

<210> 21
<211> 11
<212> DNA
<213> Homo sapiens

<400> 21
caggtttcat a 11

<210> 22
<211> 11
<212> DNA
<213> Homo sapiens

<400> 22
gcacaagttc t 11

<210> 23
<211> 11
<212> DNA
<213> Homo sapiens

<400> 23
agcttgtggc c 11

<210> 24
<211> 11
<212> DNA
<213> Homo sapiens

<400> 24
cttctggata a 11

<210> 25
<211> 11
<212> DNA
<213> Homo sapiens

<400> 25
caacaataat a 11

<210> 26
<211> 11
<212> DNA
<213> Homo sapiens

<400> 26
accggcgccc g 11

<210> 27
<211> 11
<212> DNA
<213> Homo sapiens

<400> 27
ggaagctaag t 11

<210> 28
<211> 11

<212> DNA
<213> Homo sapiens

<400> 28
gcaatttaac c 11

<210> 29
<211> 11
<212> DNA
<213> Homo sapiens

<400> 29
gataactaca t 11

<210> 30
<211> 11
<212> DNA
<213> Homo sapiens

<400> 30
tatgagggta a 11

<210> 31
<211> 11
<212> DNA
<213> Homo sapiens

<400> 31
ccacgggatt c 11

<210> 32
<211> 11
<212> DNA
<213> Homo sapiens

<400> 32
tttacaaaga g 11

<210> 33
<211> 11
<212> DNA
<213> Homo sapiens

<400> 33
cccagtaaga t 11

<210> 34
<211> 11
<212> DNA
<213> Homo sapiens

<400> 34
acaaagcatt t 11

<210> 35
<211> 11
<212> DNA
<213> Homo sapiens

<400> 35
gcctgtccct c 11

<210> 36
<211> 11
<212> DNA
<213> Homo sapiens

<400> 36
tactttataa g 11

<210> 37
<211> 11
<212> DNA
<213> Homo sapiens

<400> 37
tgtttaatac a 11

<210> 38
<211> 11
<212> DNA
<213> Homo sapiens

<400> 38
gtccctgcct t 11

<210> 39
<211> 11
<212> DNA
<213> Homo sapiens

<400> 39
gagccatcat a 11

<210> 40
<211> 11
<212> DNA
<213> Homo sapiens

<400> 40
ggccctacag t 11

<210> 41
<211> 11
<212> DNA
<213> Homo sapiens

<400> 41
gctaacccct g 11

<210> 42
<211> 11
<212> DNA
<213> Homo sapiens

<400> 42
atcacacagc t 11

<210> 43
<211> 11
<212> DNA
<213> Homo sapiens

<400> 43
acaagtactg t 11

<210> 44
<211> 11
<212> DNA
<213> Homo sapiens

<400> 44
tcaccgtgga c 11

<210> 45
<211> 11
<212> DNA
<213> Homo sapiens

<400> 45
acattccaag t 11

<210> 46
<211> 11
<212> DNA
<213> Homo sapiens

<400> 46
gagcctggat a 11

<210> 47
<211> 11
<212> DNA
<213> Homo sapiens

<400> 47
ggcactcctg t 11

<210> 48
<211> 11
<212> DNA
<213> Homo sapiens

<400> 48
tcacagcccc c 11

<210> 49
<211> 11
<212> DNA
<213> Homo sapiens

<400> 49
tgccaggtgc a 11

<210> 50
<211> 11
<212> DNA
<213> Homo sapiens

<400> 50
tgggaaacct g 11

<210> 51

<211> 11
<212> DNA
<213> Homo sapiens

<400> 51
tttcatccac t 11

<210> 52
<211> 11
<212> DNA
<213> Homo sapiens

<400> 52
aacaggggcc a 11

<210> 53
<211> 11
<212> DNA
<213> Homo sapiens

<400> 53
actgaaagaa g 11

<210> 54
<211> 11
<212> DNA
<213> Homo sapiens

<400> 54
accgttctgt a 11

<210> 55
<211> 11
<212> DNA
<213> Homo sapiens

<400> 55
atactataat t 11

<210> 56
<211> 11
<212> DNA
<213> Homo sapiens

<400> 56
tttgtataga a 11

<210> 57
<211> 11
<212> DNA
<213> Homo sapiens

<400> 57
gtaatgacag a 11

<210> 58
<211> 11
<212> DNA
<213> Homo sapiens

<400> 58

aataggggaa a 11

<210> 59
<211> 11
<212> DNA
<213> Homo sapiens

<400> 59
gtgctacttc t 11

<210> 60
<211> 11
<212> DNA
<213> Homo sapiens

<400> 60
ccggcccctc c 11

<210> 61
<211> 11
<212> DNA
<213> Homo sapiens

<400> 61
ttgaatttgt t 11

<210> 62
<211> 11
<212> DNA
<213> Homo sapiens

<400> 62
cgagagtgtg a 11

<210> 63
<211> 11
<212> DNA
<213> Homo sapiens

<400> 63
ccctgttcag c 11

<210> 64
<211> 11
<212> DNA
<213> Homo sapiens

<400> 64
cagatggagg c 11

<210> 65
<211> 11
<212> DNA
<213> Homo sapiens

<400> 65
aggctcctgg c 11

<210> 66
<211> 11
<212> DNA

<213> Homo sapiens

<400> 66
tctgcttcta g 11

<210> 67
<211> 11
<212> DNA
<213> Homo sapiens

<400> 67
ggcttaggat g 11

<210> 68
<211> 11
<212> DNA
<213> Homo sapiens

<400> 68
ggttgttgcg g 11

<210> 69
<211> 11
<212> DNA
<213> Homo sapiens

<400> 69
acaagtaccc a 11

<210> 70
<211> 11
<212> DNA
<213> Homo sapiens

<400> 70
cttctcttga g 11

<210> 71
<211> 11
<212> DNA
<213> Homo sapiens

<400> 71
gctaataatg t 11

<210> 72
<211> 11
<212> DNA
<213> Homo sapiens

<400> 72
tgtgcttttt t 11

<210> 73
<211> 11
<212> DNA
<213> Homo sapiens

<400> 73
catcacggat c 11

<210> 74
<211> 11
<212> DNA
<213> Homo sapiens

<400> 74
gcagcagcag c 11

<210> 75
<211> 11
<212> DNA
<213> Homo sapiens

<400> 75
tgactgtatt a 11

<210> 76
<211> 11
<212> DNA
<213> Homo sapiens

<400> 76
gaatgctctt g 11

<210> 77
<211> 11
<212> DNA
<213> Homo sapiens

<400> 77
gtagttctgg a 11

<210> 78
<211> 11
<212> DNA
<213> Homo sapiens

<400> 78
tcccctctct c 11

<210> 79
<211> 11
<212> DNA
<213> Homo sapiens

<400> 79
gggcagtggc t 11

<210> 80
<211> 11
<212> DNA
<213> Homo sapiens

<400> 80
aaatatgtgt t 11

<210> 81
<211> 11
<212> DNA
<213> Homo sapiens

<400> 81
gtcatttttct a 11

<210> 82
<211> 11
<212> DNA
<213> Homo sapiens

<400> 82
ctctccaaac c 11

<210> 83
<211> 11
<212> DNA
<213> Homo sapiens

<400> 83
ttaatgtgta a 11

<210> 84
<211> 11
<212> DNA
<213> Homo sapiens

<400> 84
tcaagcaatc a 11

<210> 85
<211> 11
<212> DNA
<213> Homo sapiens

<400> 85
gaagacactt g 11

<210> 86
<211> 11
<212> DNA
<213> Homo sapiens

<400> 86
gggtagggtg a 11

<210> 87
<211> 11
<212> DNA
<213> Homo sapiens

<400> 87
tggaacagtg a 11

<210> 88
<211> 11
<212> DNA
<213> Homo sapiens

<400> 88
gagtggctac c 11

<210> 89
<211> 11

<212> DNA
<213> Homo sapiens

<400> 89
gtcagggtcc c 11

<210> 90
<211> 11
<212> DNA
<213> Homo sapiens

<400> 90
gtcagtcact t 11

<210> 91
<211> 11
<212> DNA
<213> Homo sapiens

<400> 91
agcagagaca a 11

<210> 92
<211> 11
<212> DNA
<213> Homo sapiens

<400> 92
agcgatggag a 11

<210> 93
<211> 11
<212> DNA
<213> Homo sapiens

<400> 93
cgtggggtgt a 11

<210> 94
<211> 11
<212> DNA
<213> Homo sapiens

<400> 94
ggggctgccc a 11

<210> 95
<211> 11
<212> DNA
<213> Homo sapiens

<400> 95
gatctccgtg t 11

<210> 96
<211> 11
<212> DNA
<213> Homo sapiens

<400> 96
catttttatc t 11

<210> 97
<211> 11
<212> DNA
<213> Homo sapiens

<400> 97
ctttctttga g 11

<210> 98
<211> 11
<212> DNA
<213> Homo sapiens

<400> 98
tattaactct c 11

<210> 99
<211> 11
<212> DNA
<213> Homo sapiens

<400> 99
caggagaccc c 11

<210> 100
<211> 11
<212> DNA
<213> Homo sapiens

<400> 100
ggaaatgtca a 11

<210> 101
<211> 11
<212> DNA
<213> Homo sapiens

<400> 101
cctggttcag t 11

<210> 102
<211> 11
<212> DNA
<213> Homo sapiens

<400> 102
tttttaagaa c 11

<210> 103
<211> 11
<212> DNA
<213> Homo sapiens

<400> 103
tttggttttc c 11

<210> 104
<211> 11
<212> DNA
<213> Homo sapiens

<400> 104
attttgtatg a 11

<210> 105
<211> 11
<212> DNA
<213> Homo sapiens

<400> 105
actttagatg g 11

<210> 106
<211> 11
<212> DNA
<213> Homo sapiens

<400> 106
gagtgagacc c 11

<210> 107
<211> 11
<212> DNA
<213> Homo sapiens

<400> 107
gtacacacac c 11

<210> 108
<211> 11
<212> DNA
<213> Homo sapiens

<400> 108
ccacagggga t 11

<210> 109
<211> 11
<212> DNA
<213> Homo sapiens

<400> 109
ttaaaagtca c 11

<210> 110
<211> 11
<212> DNA
<213> Homo sapiens

<400> 110
acagactgtt a 11

<210> 111
<211> 11
<212> DNA
<213> Homo sapiens

<400> 111
ccactgcaac c 11

<210> 112

<211> 11
<212> DNA
<213> Homo sapiens

<400> 112
ctataggaga c 11

<210> 113
<211> 11
<212> DNA
<213> Homo sapiens

<400> 113
gttccacaga a 11

<210> 114
<211> 11
<212> DNA
<213> Homo sapiens

<400> 114
taccacctcc c 11

<210> 115
<211> 11
<212> DNA
<213> Homo sapiens

<400> 115
gccctttctc t 11

<210> 116
<211> 11
<212> DNA
<213> Homo sapiens

<400> 116
ttaaatagca c 11

<210> 117
<211> 11
<212> DNA
<213> Homo sapiens

<400> 117
agacatactg a 11

<210> 118
<211> 11
<212> DNA
<213> Homo sapiens

<400> 118
tcccccagga g 11

<210> 119
<211> 11
<212> DNA
<213> Homo sapiens

<400> 119

agcccaaagt g 11

<210> 120
<211> 11
<212> DNA
<213> Homo sapiens

<400> 120
actaccataa c 11

<210> 121
<211> 11
<212> DNA
<213> Homo sapiens

<400> 121
tacaaatcgt t 11

<210> 122
<211> 11
<212> DNA
<213> Homo sapiens

<400> 122
ttgggtgaaa a 11

<210> 123
<211> 11
<212> DNA
<213> Homo sapiens

<400> 123
cattatccaa a 11

<210> 124
<211> 11
<212> DNA
<213> Homo sapiens

<400> 124
agaaaccacg g 11

<210> 125
<211> 11
<212> DNA
<213> Homo sapiens

<400> 125
accaaaacca c 11

<210> 126
<211> 10
<212> DNA
<213> Homo sapiens

<400> 126
tgaaataaac 10

<210> 127
<211> 10
<212> DNA

<213> Homo sapiens

<400> 127
tttggtttcc 10

<210> 128
<211> 11
<212> DNA
<213> Homo sapiens

<400> 128
gtggagacgg a 11

<210> 129
<211> 11
<212> DNA
<213> Homo sapiens

<400> 129
tttgtgttgt a 11

<210> 130
<211> 11
<212> DNA
<213> Homo sapiens

<400> 130
ttatgtttaa t 11

<210> 131
<211> 11
<212> DNA
<213> Homo sapiens

<400> 131
tggaaatgac c 11

<210> 132
<211> 11
<212> DNA
<213> Homo sapiens

<400> 132
tgccacacag t 11

<210> 133
<211> 11
<212> DNA
<213> Homo sapiens

<400> 133
gatgaggaga c 11

<210> 134
<211> 11
<212> DNA
<213> Homo sapiens

<400> 134
atcaaaggtt t 11

<210> 135
<211> 11
<212> DNA
<213> Homo sapiens

<400> 135
agtcacatag t 11

<210> 136
<211> 11
<212> DNA
<213> Homo sapiens

<400> 136
ttcggttggt c 11

<210> 137
<211> 11
<212> DNA
<213> Homo sapiens

<400> 137
ccccacacgg g 11

<210> 138
<211> 11
<212> DNA
<213> Homo sapiens

<400> 138
ggcttgcctt t 11

<210> 139
<211> 11
<212> DNA
<213> Homo sapiens

<400> 139
atcccttccc g 11

<210> 140
<211> 11
<212> DNA
<213> Homo sapiens

<400> 140
tctcacgtct c 11

<210> 141
<211> 11
<212> DNA
<213> Homo sapiens

<400> 141
ctagcgtttt a 11

<210> 142
<211> 11
<212> DNA
<213> Homo sapiens

<400> 142
gtggctgacg c 11

<210> 143
<211> 11
<212> DNA
<213> Homo sapiens

<400> 143
ctcttaaaaa a 11

<210> 144
<211> 11
<212> DNA
<213> Homo sapiens

<400> 144
tgggaagagg g 11

<210> 145
<211> 11
<212> DNA
<213> Homo sapiens

<400> 145
gtttaaggat g 11

<210> 146
<211> 11
<212> DNA
<213> Homo sapiens

<400> 146
ctttgttttg c 11

<210> 147
<211> 11
<212> DNA
<213> Homo sapiens

<400> 147
attgccaatc t 11

<210> 148
<211> 11
<212> DNA
<213> Homo sapiens

<400> 148
tgttgaaaaa a 11

<210> 149
<211> 11
<212> DNA
<213> Homo sapiens

<400> 149
acaaaaaggc c 11

<210> 150
<211> 11

<212> DNA
<213> Homo sapiens

<400> 150
aagatgcaca c 11

<210> 151
<211> 11
<212> DNA
<213> Homo sapiens

<400> 151
gtagaggaaa a 11

<210> 152
<211> 11
<212> DNA
<213> Homo sapiens

<400> 152
ttgttcaagg g 11

<210> 153
<211> 11
<212> DNA
<213> Homo sapiens

<400> 153
ctcttcaaaa a 11

<210> 154
<211> 11
<212> DNA
<213> Homo sapiens

<400> 154
tattaaaata g 11

<210> 155
<211> 11
<212> DNA
<213> Homo sapiens

<400> 155
gaattcacca g 11

<210> 156
<211> 11
<212> DNA
<213> Homo sapiens

<400> 156
aaggagaact g 11

<210> 157
<211> 11
<212> DNA
<213> Homo sapiens

<400> 157
aatatctgac t 11

<210> 158
<211> 11
<212> DNA
<213> Homo sapiens

<400> 158
tcagtgacca g 11

<210> 159
<211> 11
<212> DNA
<213> Homo sapiens

<400> 159
gcaaagtgcc c 11

<210> 160
<211> 11
<212> DNA
<213> Homo sapiens

<400> 160
taaatacttg t 11

<210> 161
<211> 11
<212> DNA
<213> Homo sapiens

<400> 161
gtcactaatt t 11

<210> 162
<211> 11
<212> DNA
<213> Homo sapiens

<400> 162
ataacctgca g 11

<210> 163
<211> 11
<212> DNA
<213> Homo sapiens

<400> 163
tgcatctgtg c 11

<210> 164
<211> 11
<212> DNA
<213> Homo sapiens

<400> 164
taaaggcaca g 11

<210> 165
<211> 11
<212> DNA
<213> Homo sapiens

<400> 165
gaccgcggct t 11

<210> 166
<211> 11
<212> DNA
<213> Homo sapiens

<400> 166
actccggtgt g 11

<210> 167
<211> 11
<212> DNA
<213> Homo sapiens

<400> 167
cttctcacct a 11

<210> 168
<211> 11
<212> DNA
<213> Homo sapiens

<400> 168
tcgtgctttg t 11

<210> 169
<211> 11
<212> DNA
<213> Homo sapiens

<400> 169
gagcagtgct g 11

<210> 170
<211> 11
<212> DNA
<213> Homo sapiens

<400> 170
ctctaaaaaa a 11

<210> 171
<211> 11
<212> DNA
<213> Homo sapiens

<400> 171
gaaacccggt a 11

<210> 172
<211> 11
<212> DNA
<213> Homo sapiens

<400> 172
aacacagtgc c 11

<210> 173

<211> 2565
<212> DNA
<213> Homo sapiens

<400> 173
tcgcgatgct gctgcgcctg ttgctggcct gggcggccgc agggcccaca ctgggccagg 60
acccctgggc tgctgagccc cgtgccgcct gcggccccag cagctgctac gctctcttcc 120
cacggcgccg caccttcctg gaggcctggc gggcctgccg cgagctgggg ggcgacctgg 180
ccactcctcg gacccccgag gaggcccagc gtgtggacag cctggtgggt gcgggcccag 240
ccagccggct gctgtggatc gggctgcagc ggcaggcccg gcaatgccag ctgcagcgcc 300
cactgcgcgg cttcacgtgg accacagggg accaggacac ggctttcacc aactgggccc 360
agccagcctc tggaggcccc tgcccggccc agcgctgtgt ggccctggag gcaagtggcg 420
agcaccgctg gctggagggc tcgtgcacgc tggctgtcga cggctacctg tgccagtttg 480
gcttcgaggg cgcctgcccg gcgctgcaag atgaggcggg ccaggccggc ccagccgtgt 540
ataccacgcc cttccacctg gtctccacag agtttgagtg gctgcccttc ggctctgtgg 600
ccgctgtgca gtgccaggct ggcaggggag cctctctgct ctgcgtgaag cagcctgagg 660
gaggtgtggg ctggtcacgg gctgggcccc tgtgcctggg gactggctgc agccctgaca 720
acgggggctg cgaacacgaa tgtgtggagg aggtggatgg tcacgtgtcc tgccgctgca 780
ctgagggctt ccggctggca gcagacgggc gcagttgcga ggacccctgt gcccaggctc 840
cgtgcgagca gcagtgtgag cccggtgggc cacaaggcta cagctgccac tgtcgcctgg 900
gtttccggcc agcggaggat gatccgcacc gctgtgtgga cacagatgag tgccagattg 960
ccggtgtgtg ccagcagatg tgtgtcaact acgttggtgg cttcgagtgt tattgtagcg 1020
agggacatga gctggaggct gatggcatca gctgcagccc tgcaggggcc atgggtgccc 1080
aggcttccca ggacctcgga gatgagttgc tggatgacgg ggaggatgag gaagatgaag 1140
acgaggcctg gaaggccttc aacggtggct ggacggagat gcctgggatc ctgtggatgg 1200
agcctacgca gccgcctgac tttgccctgg cctatagacc gagcttccca gaggacagag 1260
agccacagat accctacccg gagcccacct ggccaccccc gctcagtgcc cccagggtcc 1320
cctaccactc ctcagtgctc tccgtcaccc ggcctgtggt ggtctctgcc acgcatccca 1380
cactgccttc tgcccaccag cctcctgtga tccctgccac acacccagct ttgtcccgtg 1440
accaccagat ccccgtgatc gcagccaact atccagatct gccttctgcc taccaacccg 1500
gtattctctc tgtctctcat tcagcacagc ctcctgccca ccagcccctt atgatctcaa 1560
ccaaatatcc ggagctcttc cctgcccacc agtcccccat gtttccagac acccgggtcg 1620
ctggcaccca gaccaccact catttgcctg gaatcccacc taaccatgcc cctctggtca 1680
ccaccctcgg tgcccagcta ccccctcaag ccccagatgc ccttgtcctc agaacccagg 1740
ccacccagct tcccattatc ccaactgccc agccctctct gaccaccacc tccaggtccc 1800
ctgtgtctcc tgcccatcaa atctctgtgc ctgctgccac ccagcccgca gccctcccca 1860
ccctcctgcc ctctcagagc cccactaacc agacctcacc catcagccct acacatcccc 1920
attccaaagc cccccaaatc ccaagggaag atggccccag tcccaagttg gccctgtggc 1980
tgccctcacc agctcccaca gcagccccaa cagccctggg ggaggctggt cttgccgagc 2040
acagccagag ggatgaccgg tggctgctgg tggcactcct ggtgccaacg tgtgtctttt 2100
tggtggtcct gcttgcactg ggcatcgtgt actgcacccg ctgtggcccc catgcaccca 2160
acaagcgcat cactgactgc tatcgctggg tcatccatgc tgggagcaag agcccaacag 2220
aacccatgcc ccccaggggc agcctcacag gggtgcagac ctgcagaacc agcgtgtgat 2280
ggggtgcaga ccccccctcat ggagtatggg gcgctggaca catggccggg gctgcaccag 2340
ggacccatgg gggctgccca gctggacaga tggcttcctg ctccccaggc ccagccaggg 2400
tcctctctca accactagac ttggctctca ggaactctgc ttcctggccc agcgctcgtg 2460
accaaggata caccaaagcc cttaagacct caggggggcgg gtgctggggt cttctccaat 2520
aaatggggtg tcaaccttaa aaaaaaaaaa aaaaaaaaaa aaaaa 2565

<210> 174
<211> 2832
<212> DNA
<213> Homo sapiens

<400> 174
atgcctgctt ctctcgcttt gttgcagccc cgagccatga tgaagacttt gtccagcggg 60
aactgcacgc tcagtgtgcc cgccaaaaac tcataccgca tggtggtgct gggtgcctct 120
cgggtgggca agagctccat cgtgtctcgc ttcctcaatg gccgctttga ggaccagtac 180
acacccacca tcgaggactt ccaccgtaag gtatacaaca tccgcggcga catgtaccag 240
ctcgacatcc tggatacctc tggcaaccac cccttccccg ccatgcgcag gctgtccatc 300
ctcacagggg atgtcttcat cctggtgttc agcctggata accgggagtc cttcgatgag 360

gtcaagcgcc ttcagaagca gatcctggag gtcaagtcct gcctgaagaa caagaccaag 420
gaggcggcgg agctgcccat ggtcatctgt ggcaacaaga acgaccacgg cgagctgtgc 480
cgccaggtgc ccaccaccga ggccgagctg ctggtgtcgg gcgacgagaa ctgcgcctac 540
ttcgaggtgt cggccaagaa gaacaccaac gtggacgaga tgttctacgt gctcttcagc 600
atggccaagc tgccacacga gatgagcccc gccctgcatc gcaagatctc cgtgcagtac 660
ggtgacgcct tccaccccag gcccttctgc atgcgccgcg tcaaggagat ggacgcctat 720
ggcatggtct cgcccttcgc ccgccgcccc agcgtcaaca gtgacctcaa gtacatcaag 780
gccaaggtcc ttcgggaagg ccaggcccgt gagagggaca agtgcaccat ccagtgagcg 840
agggatgctg gggcggggct tggccagtgc cttcagggag gtggccccag atgcccactg 900
tgcgcatctc cccaccgagg ccccggcagc agtcttgttc acagacctta ggcaccagac 960
tggaggcccc cgggcgctgg cctccgcaca ttcgtctgcc ttctcacagc tttcctgagt 1020
ccgcttgtcc acagctcctt ggtggtttca tctcctctgt gggaggacac atctctgcag 1080
cctcaagagt taggcagaga ctcaagttac accttcctct cctggggttg gaagaaatgt 1140
tgatgccaga ggggtgagga ttgctgcgtc atatggagcc tcctgggaca agcctcagga 1200
tgaaaaggac acagaaggcc agatgagaaa ggtctcctct ctcctggcat aacacccagc 1260
ttggtttggg tggcagctgg gagaacttct ctcccagccc tgcaactctt acgctctggt 1320
tcagctgcct ctgcaccccc tcccaccccc agcacacaca caagttggcc cccagctgcg 1380
cctgacattg agccagtgga ctctgtgtct gaaggggggcg tggccacacc tcctagacca 1440
cgcccaccac ttagaccacg cccacctcct gaccgcgttc ctcagcctcc tctcctaggt 1500
ccctccgccc gacagttgtg ctttgttgtg gttgcagctg ttttcgtgtc atgtatagta 1560
gtagaaatgg aaatcattgt actgtaaaag cctagtgact ccctccttgg ccaggccctc 1620
acccagttca gatccacggc ctccacccgg gacgccttcc tcctctgctc ccaaacaggg 1680
tttccgtggc ctgtttgcag ctagacattg acctccgcca ttgagctcca cggtttacag 1740
acaattgcac aagcgtgggg tgggcaggcc aggactgctt ttttttaatg ctcccatttc 1800
acagaggata ccaccgagac tcggagggga cacgatgagc accaggcccc acctttgtcc 1860
cctagcaaat tcagggtaca gctccaccta gaaccaggct gccctctact gtgctcgttc 1920
ctcaagcatt tattaagcac ctactgggtg ctgggttcac tgtgtcctag gaaaccaaga 1980
gggtccccag tcctggcctc tgcccgcccc tgctgcccca ccaccttctg cacacacagc 2040
ggtggggagg cggggaggag cagctgggac ccagaactga gcctgggagg gatccgacag 2100
aaaagctcag ggcgggtctt ctccttgtgc ccgggattgg gctatgctgg gtaccaccat 2160
gtactcaggc atggtgggtt ttgaacccat aaaccaaagg cccttgtcat cagctcttaa 2220
caagtatatt ttgtatttta atctctctaa acatattgaa gttttagggc cctaaggaac 2280
cttagtgatc ttctattggg tctttctgag gttcagagag ggtaagtaac ttcctccagg 2340
tcacacagca agtctgtggg tggcagaagc aagctagcgc tgggcattca gtacatacca 2400
cgatgtgctc cctctcttga tgcttggccc ctggggcctt cagggctttg ggacatcttg 2460
tcctcaaccc tctccctaga tcagtctgtg agggtccctg tagatattgt gtacaccatg 2520
cccatgtata tacaagtaca cacagatgta cacacagatg tacacatgct ccagccccag 2580
ctctgcatac ctgcacctgc accccagcct tggcccctgc ctgcgtctgt gctcaaagca 2640
gcagctccaa ccctgcctct gtccccttcc ccacccactg cctgagcctt ctgagcagac 2700
caggtacctt ggctgcaccg gtgtgtggcc cgctctcacc caggcacagc cccgccacca 2760
tggatctccg tgtacactat caataaaagt gggtttgtta caaaaaaaaa aaaaaaaaaa 2820
aaaaaaaaaa aa 2832

<210> 175
<211> 4640
<212> DNA
<213> Homo sapiens

<400> 175
gcggccgcag cctgagccag ggccccctcc ctcgtcagga ccggggcagc aagcaggccg 60
ggggcaggtc cgggcaccca ccatgcgagg cgagctctgg ctcctggtgc tggtgctcag 120
ggaggctgcc cgggcgctga gcccccagcc cggagcaggt cacgatgagg gcccaggctc 180
tggatgggct gccaaaggga ccgtgcgggg ctggaaccgg agagcccgag agagccctgg 240
gcatgtgtca gagccggaca ggacccagct gagccaggac ctgggtgggg gcaccctggc 300
catggacacg ctgccagata acaggaccag ggtggtggag gacaaccaca gctattatgt 360
gtcccgtctc tatggcccca gcgagcccca cagccgggaa ctgtgggtag atgtggccga 420
ggccaaccgg agccaagtga agatccacac aatactctcc aacacccacc ggcaggcttc 480
gagagtggtc ttgtcctttg atttcccttt ctacgggcat cctctgcggc agatcaccat 540
agcaactgga ggcttcatct tcatggggga cgtgatccat cggatgctca cagctactca 600
gtatgtggcg cccctgatgg ccaacttcaa ccctggctac tccgacaact ccacagttgt 660
ttactttgac aatgggacag tctttgtggt tcagtgggac cacgtttatc tccaaggctg 720

ggaagacaag ggcagtttca ccttccaggc agctctgcac catgacggcc gcattgtctt 780
tgcctataaa gagatcccta tgtctgtccc ggaaatcagc tcctcccagc atcctgtcaa 840
aaccggccta tcggatgcct tcatgattct caatccatcc ccggatgtgc cagaatctcg 900
gcgaaggagc atctttgaat accaccgcat agagctggac cccagcaagg tcaccagcat 960
gtcggccgtg gagttcaccc cattgccgac ctgcctgcag cataggagct gtgacgcctg 1020
catgtcctca gacctgacct tcaactgcag ctggtgccat gtcctccaga gatgctccag 1080
tggctttgac cgctatcgcc aggagtggga tgggactatg ggctgtgcac aggaggcaga 1140
ggggcaggat gtgcgaggac ttccagggat gaggaccacg acttcagcct cccctgacac 1200
ttccttcagc ccctatgatg gagacctcac cactacctcc tcctccctct tcatcgacag 1260
cctcaccaca gaagatgaca ccaagttgaa tccctatgca ggaggagacg gccttcagaa 1320
caacctgtcc cccaagacaa agggcactcc tgtgcacctg ggcaccatcg tgggcatcgt 1380
gctggcagtc ctcctcgtgg cggccatcat cctggctgga atttacatca atggccaccc 1440
cacatccaat gctgcgctct tcttcatcga gcgtagacct caccactggc cagccatgaa 1500
gtttcgcagc caccctgacc attccaccta tgcggaggtg gagccctcgg gccatgagaa 1560
ggagggcttc atggaggctg agcagtgctg agaacaccaa gtctcccctt tgaagacttt 1620
gaggccacag aaaagacagt taaagcaaag aagagaagtg acttttcctg gcctctccca 1680
gcatgccctg ggctgagatg agatggtggt ttatggctcc agagctgctg ttcgcttcgt 1740
cagcacaccc cgaatattga agaggggggcc aaaaaacaac cacatggatt ttttatagga 1800
acaacaacct aatctcatcc tgttttgatg caagggttct cttctgtgtc ttgtaaccat 1860
gaaacagcag aagaactaac ataactaact ccatttttgt ttaaggggcc tttacctatt 1920
cctgcaccta ggctaggata actttagagc actgacataa aacgcaaaaa caggaatcat 1980
gccgtttgca aaactaactc tgggattaaa ggggaagcat gtaaacagct aactgttttt 2040
gttaaagatt tataggaatg aggaggtttg gctattgtca catgacagac tgttagccaa 2100
ggacaaagaa gttctgcaaa cctcccctgg acccttgctg gtgtccagat gtctgcggtt 2160
gtcagcccct tcctttcccc cgacctaaac ataaaagaca aggcaaagcc cgcataattt 2220
taagacggtt ctttaggaca ttagtccacc atcttcttgg tttgctggct ctccgaaata 2280
aagtcccttt ccttgctcca aaaaaaaaaa aaaaaaaaaa gcggccgcag cctgagccag 2340
ggcccctcc ctcgtcagga ccggggcagc aagcaggccg ggggcaggtc cgggcaccca 2400
ccatgcgagg cgagctctgg ctcctggtgc tggtgctcag ggaggctgcc cgggcgctga 2460
gcccccagcc cggagcaggt cacgatgagg gcccaggctc tggatgggct gccaaaggga 2520
ccgtgcgggg ctggaaccgg agagcccgag agagccctgg gcatgtgtca gagccggaca 2580
ggacccagct gagccaggac ctgggtgggg gcaccctggc catggacacg ctgccagata 2640
acaggaccag ggtggtggag gacaaccaca gctattatgt gtcccgtctc tatggcccca 2700
gcgagcccca cagccgggaa ctgtgggtag atgtggccga ggccaaccgg agccaagtga 2760
agatccacac aatactctcc aacacccacc ggcaggcttc gagagtggtc ttgtcctttg 2820
atttcccttt ctacgggcat cctctgcggc agatcaccat agcaactgga ggcttcatct 2880
tcatggggga cgtgatccat cggatgctca cagctactca gtatgtggcg cccctgatgg 2940
ccaacttcaa ccctggctac tccgacaact ccacagttgt ttactttgac aatgggacag 3000
tctttgtggt tcagtgggac cacgtttatc tccaaggctg ggaagacaag ggcagtttca 3060
ccttccaggc agctctgcac catgacggcc gcattgtctt tgcctataaa gagatcccta 3120
tgtctgtccc ggaaatcagc tcctcccagc atcctgtcaa aaccggccta tcggatgcct 3180
tcatgattct caatccatcc ccggatgtgc cagaatctcg gcgaaggagc atctttgaat 3240
accaccgcat agagctggac cccagcaagg tcaccagcat gtcggccgtg gagttcaccc 3300
cattgccgac ctgcctgcag cataggagct gtgacgcctg catgtcctca gacctgacct 3360
tcaactgcag ctggtgccat gtcctccaga gatgctccag tggctttgac cgctatcgcc 3420
aggagtggat ggactatggc tgtgcacagg aggcagaggg caggatgtgc gaggacttcc 3480
aggatgagga ccacgactca gcctcccctg acacttcctt cagcccctat gatggagacc 3540
tcaccactac ctcctcctcc ctcttcatcg acagcctcac cacagaagat gacaccaagt 3600
tgaatcccta tgcaggagga gacggccttc agaacaacct gtccccaag acaaagggca 3660
ctcctgtgca cctgggcacc atcgtgggca tcgtgctggc agtcctcctc gtggcggcca 3720
tcatcctggc tggaatttac atcaatggcc accccacatc caatgctgcg ctcttcttca 3780
tcgagcgtag acctcaccac tggccagcca tgaagtttcg cagccaccct gaccattcca 3840
cctatgcgga ggtggagccc tcgggccatg agaaggaggg cttcatggag gctgagcagt 3900
gctgagaaca ccaagtctcc cctttgaaga ctttgaggcc acagaaaaga cagttaaagc 3960
aaagaagaga agtgactttt cctggcctct cccagcatgc cctgggctga gatgagatgg 4020
tggtttatgg ctccagagct gctgctcgct tcgtcagcac accccgaata ttgaagaggg 4080
ggccaaaaaa caaccacatg gatttttat aggaacaaca acctaatctc atcctgtttt 4140
gatgcaaggg ttctcttctg tgtcttgtaa ccatgaaaca gcagaagaac taacataact 4200
aactccattt ttrtttaagg ggcctttacc tattcctgca cctaggctag gataacttta 4260
gagcactgas ataaaacgca aaaacaggaa tcatgccgtt tgcaaaacta actctgggat 4320
taaaggggaa gcatgtaaac agctaactgt ttttgttaaa gatttatagg aatgaggagg 4380

tttggctatt gtcacatgac agactgttag ccaaggacaa agaagttctg caaacctccc 4440
ctggaccctt gctggtgtcc agatgtctgc ggttgtcagc cccttccttt cccccgacct 4500
aaacataaaa gacaaggcaa agcccgcata attttaagac ggttctttag gacattagtc 4560
caccatcttc ttggtttgct ggctctccga aataaagtcc ctttccttgc tccaaaaaaa 4620
aaaaaaaaaa aaaaaaaaaa 4640

<210> 176
<211> 5540
<212> DNA
<213> Homo sapiens

<400> 176
aattgcttcc ggggagttgc gagggagcga gggggaataa aggacccgcg aggaagggcc 60
cgcggatggc gcgtccctga gggtcgtggc gagttcgcgg agcgtgggaa ggagcggacc 120
ctgctctccc cgggctgcgg gccatggcca cggcggagcg gagagccctc ggcatcggct 180
tccagtggct ctctttggcc actctggtgc tcatctgcgc cgggcaaggg ggacgcaggg 240
aggatggggg tccagcctgc tacggcggat ttgacctgta cttcattttg gacaaatcag 300
gaagtgtgct gcaccactgg aatgaaatct attactttgt ggaacagttg gctcacaaat 360
tcatcagccc acagttgaga atgtccttta ttgttttctc cacccgagga acaaccttaa 420
tgaaactgac agaagacaga gaacaaatcc gtcaaggcct agaagaactc cagaaagttc 480
tgccaggagg agacacttac atgcatgaag gatttgaaag ggccagtgag cagatttatt 540
atgaaaacag acaagggtac aggacagcca gcgtcatcat tgctttgact gatggagaac 600
tccatgaaga tctctttttc tattcagaga gggaggctaa taggtctcga gatcttggtg 660
caattgttta ctgtgttggt gtgaaagatt tcaatgagac acagctggcc cggattgcgg 720
acagtaagga tcatgtgttt cccgtgaatg acggctttca ggctctgcaa ggcatcatcc 780
actcaatttt gaagaagtcc tgcatcgaaa ttctagcagc tgaaccatcc accatatgtg 840
caggagagtc atttcaagtt gtcgtgagag gaaacggctt ccgacatgcc cgcaacgtgg 900
acagggtcct ctgcagcttc aagatcaatg actcggtcac actcaatgag aagccctttt 960
ctgtggaaga tacttattta ctgtgtccag cgcctatctt aaaagaagtt ggcatgaaag 1020
ctgcactcca ggtcagcatg aacgatggcc tctcttttat ctccagttct gtcatcatca 1080
ccaccacaca ctgttctgac ggttccatcc tggccatcgc cctgctgatc ctgttcctgc 1140
tcctagccct ggctctcctc tggtggttct ggcccctctg ctgcactgtg attatcaagg 1200
aggtccctcc acccccctgcc gaggagagtg aggaagaaga tgatgatggt ctgcctaaga 1260
aaaagtggcc aacggtagac gcctcttatt atggtgggag aggcgttgga ggcattaaaa 1320
gaatggaggt tcgttgggga gaaaagggct ccacagaaga aggtgctaag ttggaaaagg 1380
caaagaatgc aagagtcaag atgccggagc aggaatatga attccctgag ccgcgaaatc 1440
tcaacaacaa tatgcgtcgg ccttcttccc cccggaagtg gtactctcca atcaagggaa 1500
aactcgatgc cttgtgggtc ctactgagga aaggatatga tcgtgtgtct gtgatgcgtc 1560
cacagccagg agacacgggg cgctgcatca acttcaccag ggtcaagaac aaccagccag 1620
ccaagtaccc actcaacaac gcctaccaca cctcctcgcc gcctcctgcc cccatctaca 1680
ctcccccacc tcctgcgccc cactgccctc ccccgccccc cagcgccccc acccctccca 1740
tcccgtcccc accttccacc cttcccccctc ctccccaggc tccacctccc aacagggcac 1800
ctcctccctc ccgccctcct ccaaggcctt ctgtctagag cccaaagttc ctgctctggg 1860
ctctctcaga aacttcagga gatgttagaa caagtctttc cagttagaga agaggagtgg 1920
tgataaagcc cactgacctt cacacattct aaaaattggt tggcaatgcc agtataccaa 1980
caatcatgat cagctgaaag aaacagatat tttaaattgc cagaaaacaa atgatgaggc 2040
aactacagtc agatttatag ccagccatct atcacctcta gaaggttcca gagacagtga 2100
aactgcaaga tgctctcaac aggattatgt ctcatggaga ccagtaagaa aatcatttat 2160
ctgaaggtga aatgcagagt tggataagaa atacattgct gggtttctaa aatgctgcct 2220
tcctgcctct actccacctc catccctgga ctttggaccc ttggcctagg agcctaagga 2280
ccttcacccc tgtgcaccac ccaagaaaga ggaaaacttt gcctacaact ttggaaatgc 2340
tggggtccct ggtgtggtaa gaaactcaac atcagacggg tatgcagaag gatgttcttc 2400
tgggatttgc aggtacataa aaaatgtatg gcatcttttc cttgcaaatt cttccagttt 2460
ccaagtgaga aggggagcag gtgtttactg atggaaaagg tatgttgcta tgttgatgtg 2520
taagtgaaat cagttgtgtg caatagacag gggcgtattc atgggagcat cagccagttt 2580
ctaaaaccca caggccatca gcagctagag gtggctggct ttggccagac atggacccta 2640
aatcaacaga caatggcatt gtcgaagagc aacctgttaa tgaatcatgt taaaaatcaa 2700
ggtttggctt cagtttaaat cacttgaggt atgaagttta tcctgttttc cagagataaa 2760
cataagttga tcttcccaaa ataccatcat taggacctat cacacaatat cactagtttt 2820
ttttgtttgt ttgttttttg ttttttttct tggtaaagcc atgcaccaca gacttctggg 2880
cagagctgag agacaatggt cctgacataa taaggatctt tgattaaccc ccataaggca 2940

```
tgtgtgtgta tacaaatata cttctctttg gcttttcgac atagaacctc agctgttaac    3000
caaggggaaa tacatcagat ctgcaacaca gaaatgctct gcctgaaatt tccaccatgc    3060
ctaggactca ccccatttat ccaggtcttt ctggatctgt ttaatcaata agccctataa    3120
tcacttgcta aacactgggc ttcatcaccc agggataaaa acagagatca ttgtcttgga    3180
cctcctgcat cagcctattc aaaattatct ctctctctag ctttccacaa atcctaaaat    3240
tcctgtccca agccacccaa attctcagat cttttctgga acaaggcaga atataaaata    3300
aatatacatt tagtggcttg ggctatggtc tccaaagatc cttcaaaaat acatcaagcc    3360
agcttcattc actcacttta cttagaacag agatataagg gcctgggatg catttatttt    3420
atcaatacca atttttgtgg ccatggcaga cattgctaat caatcacagc actatttcct    3480
attaagccca ctgatttctt cacaatcctt ctcaaattac aattccaaag agccgccact    3540
caacagtcag atgaacccaa cagtcagatg agagaaatga accctacttg ctatctctat    3600
cttagaaagc aaaaacaaac aggagtttcc agggagaatg ggaaagccag ggggcataaa    3660
aggtacagtc aggggaaaat agatctaggc agagtgcctt agtcagggac cacgggcgct    3720
gaatctgcag tgccaacacc aaactgacac atctccaggt gtacctccaa ccctagcctt    3780
ctcccacagc tgcctacaac agagtctccc agccttctca gagagctaaa accagaaatt    3840
tccagactca tgaaagcaac cccccagcct ctccccaacc ctgccgcatt gtctaatttt    3900
tagaacacta ggcttcttct ttcatgtagt tcctcataag caggggccag aatatctcag    3960
ccacctgcag tgacattgct ggacccctga aaaccattcc ataggagaat gggttcccca    4020
ggctcacagt gtagagacat tgagcccatc acaactgttt tgactgctgg cagtctaaaa    4080
cagtccaccc accccatggc actgccgcgt gattcccgcg gccattcaga agttcaagcc    4140
gagatgctga cgttgctgag caacgagatg gtgagcatca gtgcaaatgc accattcagc    4200
acatcagtca tatgcccagt gcagttacaa gatgttgttt cggcaaagca ttttgatgga    4260
atagggaact gcaaatgtat gatgattttg aaaaggctca gcaggatttg ttcttaaacc    4320
gactcagtgt gtcatccccg gttatttaga attacagtta agaaggagaa acttctataa    4380
gactgtatga acaaggtgat atcttcatag tgggctatta caggcaggaa aatgttttaa    4440
ctggtttaca aaatccatca atacttgtgt cattccctgt aaaaggcagg agacatgtga    4500
ttatgatcag gaaactgcac aaaattattg ttttcagccc ccgtgttatt gtccttttga    4560
actgtttttt ttttattaaa gccaaatttg tgttgtatat attcgtattc catgtgttag    4620
atggaagcat ttcctatcca gtgtgaataa aaagaacagt tgtagtaaat tattataaag    4680
ccgatgatat ttcatggcag gttattctac caagctgtgc ttgttggttt ttcccatgac    4740
tgtattgctt ttataaatgt acaaatagtt actgaaatga cgagaccctt gtttgcacag    4800
cattaataag aaccttgata agaaccatat tctgttgaca gccagctcac agtttcttgc    4860
ctgaagcttg gtgcaccctc cagtgagaca caagatctct cttttaccaa agttgagaac    4920
agagctggtg gattaattaa tagtcttcga tatctggcca tgggtaacct cattgtaact    4980
atcatcagaa tgggcagaga tgatcttgaa gtgtcacata cactaaagtc caaacactat    5040
gtcagatggg ggtaaaatcc attaaagaac aggaaaaaat aattataaga tgataagcaa    5100
atgtttcagc ccaatgtcaa cccagttaaa aaaaaaatta atgctgtgta aaatggttga    5160
attagtttgc aaactatata aagacatatg cagtaaaaag tctgttaatg cacatcctgt    5220
gggaatggag tgttctaacc aattgccttt tcttgttatc tgagctctcc tatattatca    5280
tactcagata accaaattaa aagaattaga atatgatttt taatacactt aacattaaac    5340
tcttctaact ttcttctttc tgtgataatt cagaagatag ttatggatct tcaatgcctc    5400
tgagtcattg ttataaaaaa tcagttatca ctataccatg ctataggaga ctgggcaaaa    5460
cctgtacaat gacaaccctg gaagttgctt tttttaaaaa aataataaat ttcttaaatc    5520
aaaaaaaaaa aaaaaaaaaa                                               5540
```

<210> 177
<211> 757
<212> PRT
<213> Homo sapiens

<400> 177

```
Met Leu Leu Arg Leu Leu Leu Ala Trp Ala Ala Ala Gly Pro Thr Leu
 1               5                  10                  15
Gly Gln Asp Pro Trp Ala Ala Glu Pro Arg Ala Ala Cys Gly Pro Ser
            20                  25                  30
Ser Cys Tyr Ala Leu Phe Pro Arg Arg Arg Thr Phe Leu Glu Ala Trp
        35                  40                  45
Arg Ala Cys Arg Glu Leu Gly Gly Asp Leu Ala Thr Pro Arg Thr Pro
    50                  55                  60
```

```
Glu Glu Ala Gln Arg Val Asp Ser Leu Val Gly Ala Gly Pro Ala Ser
65                  70                  75                  80
Arg Leu Leu Trp Ile Gly Leu Gln Arg Gln Ala Arg Gln Cys Gln Leu
                85                  90                  95
Gln Arg Pro Leu Arg Gly Phe Thr Trp Thr Thr Gly Asp Gln Asp Thr
            100                 105                 110
Ala Phe Thr Asn Trp Ala Gln Pro Ala Ser Gly Gly Pro Cys Pro Ala
        115                 120                 125
Gln Arg Cys Val Ala Leu Glu Ala Ser Gly Glu His Arg Trp Leu Glu
    130                 135                 140
Gly Ser Cys Thr Leu Ala Val Asp Gly Tyr Leu Cys Gln Phe Gly Phe
145                 150                 155                 160
Glu Gly Ala Cys Pro Ala Leu Gln Asp Glu Ala Gly Gln Ala Gly Pro
                165                 170                 175
Ala Val Tyr Thr Thr Pro Phe His Leu Val Ser Thr Glu Phe Glu Trp
            180                 185                 190
Leu Pro Phe Gly Ser Val Ala Ala Val Gln Cys Gln Ala Gly Arg Gly
        195                 200                 205
Ala Ser Leu Leu Cys Val Lys Gln Pro Glu Gly Gly Val Gly Trp Ser
    210                 215                 220
Arg Ala Gly Pro Leu Cys Leu Gly Thr Gly Cys Ser Pro Asp Asn Gly
225                 230                 235                 240
Gly Cys Glu His Glu Cys Val Glu Glu Val Asp Gly His Val Ser Cys
                245                 250                 255
Arg Cys Thr Glu Gly Phe Arg Leu Ala Ala Asp Gly Arg Ser Cys Glu
            260                 265                 270
Asp Pro Cys Ala Gln Ala Pro Cys Glu Gln Gln Cys Glu Pro Gly Gly
        275                 280                 285
Pro Gln Gly Tyr Ser Cys His Cys Arg Leu Gly Phe Arg Pro Ala Glu
    290                 295                 300
Asp Asp Pro His Arg Cys Val Asp Thr Asp Glu Cys Gln Ile Ala Gly
305                 310                 315                 320
Val Cys Gln Gln Met Cys Val Asn Tyr Val Gly Gly Phe Glu Cys Tyr
                325                 330                 335
Cys Ser Glu Gly His Glu Leu Glu Ala Asp Gly Ile Ser Cys Ser Pro
            340                 345                 350
Ala Gly Ala Met Gly Ala Gln Ala Ser Gln Asp Leu Gly Asp Glu Leu
        355                 360                 365
Leu Asp Asp Gly Glu Asp Glu Glu Asp Glu Asp Glu Ala Trp Lys Ala
    370                 375                 380
Phe Asn Gly Gly Trp Thr Glu Met Pro Gly Ile Leu Trp Met Glu Pro
385                 390                 395                 400
Thr Gln Pro Pro Asp Phe Ala Leu Ala Tyr Arg Pro Ser Phe Pro Glu
                405                 410                 415
Asp Arg Glu Pro Gln Ile Pro Tyr Pro Glu Pro Thr Trp Pro Pro Pro
            420                 425                 430
Leu Ser Ala Pro Arg Val Pro Tyr His Ser Ser Val Leu Ser Val Thr
        435                 440                 445
Arg Pro Val Val Val Ser Ala Thr His Pro Thr Leu Pro Ser Ala His
    450                 455                 460
Gln Pro Pro Val Ile Pro Ala Thr His Pro Ala Leu Ser Arg Asp His
465                 470                 475                 480
Gln Ile Pro Val Ile Ala Ala Asn Tyr Pro Asp Leu Pro Ser Ala Tyr
                485                 490                 495
Gln Pro Gly Ile Leu Ser Val Ser His Ser Ala Gln Pro Pro Ala His
            500                 505                 510
Gln Pro Pro Met Ile Ser Thr Lys Tyr Pro Glu Leu Phe Pro Ala His
        515                 520                 525
Gln Ser Pro Met Phe Pro Asp Thr Arg Val Ala Gly Thr Gln Thr Thr
    530                 535                 540
Thr His Leu Pro Gly Ile Pro Pro Asn His Ala Pro Leu Val Thr Thr
```

```
545                 550                 555                 560
Leu Gly Ala Gln Leu Pro Pro Gln Ala Pro Asp Ala Leu Val Leu Arg
                565                 570                 575
Thr Gln Ala Thr Gln Leu Pro Ile Ile Pro Thr Ala Gln Pro Ser Leu
            580                 585                 590
Thr Thr Thr Ser Arg Ser Pro Val Ser Pro Ala His Gln Ile Ser Val
        595                 600                 605
Pro Ala Ala Thr Gln Pro Ala Ala Leu Pro Thr Leu Leu Pro Ser Gln
    610                 615                 620
Ser Pro Thr Asn Gln Thr Ser Pro Ile Ser Pro Thr His Pro His Ser
625                 630                 635                 640
Lys Ala Pro Gln Ile Pro Arg Glu Asp Gly Pro Ser Pro Lys Leu Ala
                645                 650                 655
Leu Trp Leu Pro Ser Pro Ala Pro Thr Ala Ala Pro Thr Ala Leu Gly
            660                 665                 670
Glu Ala Gly Leu Ala Glu His Ser Gln Arg Asp Asp Arg Trp Leu Leu
        675                 680                 685
Val Ala Leu Leu Val Pro Thr Cys Val Phe Leu Val Val Leu Leu Ala
    690                 695                 700
Leu Gly Ile Val Tyr Cys Thr Arg Cys Gly Pro His Ala Pro Asn Lys
705                 710                 715                 720
Arg Ile Thr Asp Cys Tyr Arg Trp Val Ile His Ala Gly Ser Lys Ser
                725                 730                 735
Pro Thr Glu Pro Met Pro Pro Arg Gly Ser Leu Thr Gly Val Gln Thr
            740                 745                 750
Cys Arg Thr Ser Val
        755
```

<210> 178
<211> 278
<212> PRT
<213> Homo sapiens

<400> 178

```
Met Pro Ala Ser Leu Ala Leu Leu Gln Pro Arg Ala Met Met Lys Thr
 1               5                  10                  15
Leu Ser Ser Gly Asn Cys Thr Leu Ser Val Pro Ala Lys Asn Ser Tyr
            20                  25                  30
Arg Met Val Val Leu Gly Ala Ser Arg Val Gly Lys Ser Ser Ile Val
        35                  40                  45
Ser Arg Phe Leu Asn Gly Arg Phe Glu Asp Gln Tyr Thr Pro Thr Ile
    50                  55                  60
Glu Asp Phe His Arg Lys Val Tyr Asn Ile Arg Gly Asp Met Tyr Gln
65                  70                  75                  80
Leu Asp Ile Leu Asp Thr Ser Gly Asn His Pro Phe Pro Ala Met Arg
                85                  90                  95
Arg Leu Ser Ile Leu Thr Gly Asp Val Phe Ile Leu Val Phe Ser Leu
            100                 105                 110
Asp Asn Arg Glu Ser Phe Asp Glu Val Lys Arg Leu Gln Lys Gln Ile
        115                 120                 125
Leu Glu Val Lys Ser Cys Leu Lys Asn Lys Thr Lys Glu Ala Ala Glu
    130                 135                 140
Leu Pro Met Val Ile Cys Gly Asn Lys Asn Asp His Gly Glu Leu Cys
145                 150                 155                 160
Arg Gln Val Pro Thr Thr Glu Ala Glu Leu Leu Val Ser Gly Asp Glu
                165                 170                 175
Asn Cys Ala Tyr Phe Glu Val Ser Ala Lys Lys Asn Thr Asn Val Asp
            180                 185                 190
Glu Met Phe Tyr Val Leu Phe Ser Met Ala Lys Leu Pro His Glu Met
        195                 200                 205
Ser Pro Ala Leu His Arg Lys Ile Ser Val Gln Tyr Gly Asp Ala Phe
```

```
    210                 215                 220
His Pro Arg Pro Phe Cys Met Arg Arg Val Lys Glu Met Asp Ala Tyr
225                 230                 235                 240
Gly Met Val Ser Pro Phe Ala Arg Arg Pro Ser Val Asn Ser Asp Leu
                245                 250                 255
Lys Tyr Ile Lys Ala Lys Val Leu Arg Glu Gly Gln Ala Arg Glu Arg
            260                 265                 270
Asp Lys Cys Thr Ile Gln
        275
```

<210> 179
<211> 1002
<212> PRT
<213> Homo sapiens

<400> 179

```
Met Arg Gly Glu Leu Trp Leu Leu Val Leu Val Leu Arg Glu Ala Ala
 1               5                  10                  15
Arg Ala Leu Ser Pro Gln Pro Gly Ala Gly His Asp Glu Gly Pro Gly
            20                  25                  30
Ser Gly Trp Ala Ala Lys Gly Thr Val Arg Gly Trp Asn Arg Arg Ala
        35                  40                  45
Arg Glu Ser Pro Gly His Val Ser Glu Pro Asp Arg Thr Gln Leu Ser
    50                  55                  60
Gln Asp Leu Gly Gly Gly Thr Leu Ala Met Asp Thr Leu Pro Asp Asn
65                  70                  75                  80
Arg Thr Arg Val Val Glu Asp Asn His Ser Tyr Tyr Val Ser Arg Leu
                85                  90                  95
Tyr Gly Pro Ser Glu Pro His Ser Arg Glu Leu Trp Val Asp Val Ala
            100                 105                 110
Glu Ala Asn Arg Ser Gln Val Lys Ile His Thr Ile Leu Ser Asn Thr
        115                 120                 125
His Arg Gln Ala Ser Arg Val Val Leu Ser Phe Asp Phe Pro Phe Tyr
    130                 135                 140
Gly His Pro Leu Arg Gln Ile Thr Ile Ala Thr Gly Gly Phe Ile Phe
145                 150                 155                 160
Met Gly Asp Val Ile His Arg Met Leu Thr Ala Thr Gln Tyr Val Ala
                165                 170                 175
Pro Leu Met Ala Asn Phe Asn Pro Gly Tyr Ser Asp Asn Ser Thr Val
            180                 185                 190
Val Tyr Phe Asp Asn Gly Thr Val Phe Val Val Gln Trp Asp His Val
        195                 200                 205
Tyr Leu Gln Gly Trp Glu Asp Lys Gly Ser Phe Thr Phe Gln Ala Ala
    210                 215                 220
Leu His His Asp Gly Arg Ile Val Phe Ala Tyr Lys Glu Ile Pro Met
225                 230                 235                 240
Ser Val Pro Glu Ile Ser Ser Ser Gln His Pro Val Lys Thr Gly Leu
                245                 250                 255
Ser Asp Ala Phe Met Ile Leu Asn Pro Ser Pro Asp Val Pro Glu Ser
            260                 265                 270
Arg Arg Arg Ser Ile Phe Glu Tyr His Arg Ile Glu Leu Asp Pro Ser
        275                 280                 285
Lys Val Thr Ser Met Ser Ala Val Glu Phe Thr Pro Leu Pro Thr Cys
    290                 295                 300
Leu Gln His Arg Ser Cys Asp Ala Cys Met Ser Ser Asp Leu Thr Phe
305                 310                 315                 320
Asn Cys Ser Trp Cys His Val Leu Gln Arg Cys Ser Ser Gly Phe Asp
                325                 330                 335
Arg Tyr Arg Gln Glu Trp Asp Gly Thr Met Gly Cys Ala Gln Glu Ala
            340                 345                 350
Glu Gly Gln Asp Val Arg Gly Leu Pro Gly Met Arg Thr Thr Thr Ser
```

```
        355                 360                 365
Ala Ser Pro Asp Thr Ser Phe Ser Pro Tyr Asp Gly Asp Leu Thr Thr
    370                 375                 380
Thr Ser Ser Ser Leu Phe Ile Asp Ser Leu Thr Thr Glu Asp Asp Thr
385                 390                 395                 400
Lys Leu Asn Pro Tyr Ala Gly Gly Asp Gly Leu Gln Asn Asn Leu Ser
                405                 410                 415
Pro Lys Thr Lys Gly Thr Pro Val His Leu Gly Thr Ile Val Gly Ile
            420                 425                 430
Val Leu Ala Val Leu Leu Val Ala Ala Ile Ile Leu Ala Gly Ile Tyr
        435                 440                 445
Ile Asn Gly His Pro Thr Ser Asn Ala Ala Leu Phe Phe Ile Glu Arg
    450                 455                 460
Arg Pro His His Trp Pro Ala Met Lys Phe Arg Ser His Pro Asp His
465                 470                 475                 480
Ser Thr Tyr Ala Glu Val Glu Pro Ser Gly His Glu Lys Glu Gly Phe
                485                 490                 495
Met Glu Ala Glu Gln Cys Met Arg Gly Glu Leu Trp Leu Leu Val Leu
            500                 505                 510
Val Leu Arg Glu Ala Ala Arg Ala Leu Ser Pro Gln Pro Gly Ala Gly
        515                 520                 525
His Asp Glu Gly Pro Gly Ser Gly Trp Ala Ala Lys Gly Thr Val Arg
    530                 535                 540
Gly Trp Asn Arg Arg Ala Arg Glu Ser Pro Gly His Val Ser Glu Pro
545                 550                 555                 560
Asp Arg Thr Gln Leu Ser Gln Asp Leu Gly Gly Gly Thr Leu Ala Met
                565                 570                 575
Asp Thr Leu Pro Asp Asn Arg Thr Arg Val Val Glu Asp Asn His Ser
            580                 585                 590
Tyr Tyr Val Ser Arg Leu Tyr Gly Pro Ser Glu Pro His Ser Arg Glu
        595                 600                 605
Leu Trp Val Asp Val Ala Glu Ala Asn Arg Ser Gln Val Lys Ile His
    610                 615                 620
Thr Ile Leu Ser Asn Thr His Arg Gln Ala Ser Arg Val Val Leu Ser
625                 630                 635                 640
Phe Asp Phe Pro Phe Tyr Gly His Pro Leu Arg Gln Ile Thr Ile Ala
                645                 650                 655
Thr Gly Gly Phe Ile Phe Met Gly Asp Val Ile His Arg Met Leu Thr
            660                 665                 670
Ala Thr Gln Tyr Val Ala Pro Leu Met Ala Asn Phe Asn Pro Gly Tyr
        675                 680                 685
Ser Asp Asn Ser Thr Val Val Tyr Phe Asp Asn Gly Thr Val Phe Val
    690                 695                 700
Val Gln Trp Asp His Val Tyr Leu Gln Gly Trp Glu Asp Lys Gly Ser
705                 710                 715                 720
Phe Thr Phe Gln Ala Ala Leu His His Asp Gly Arg Ile Val Phe Ala
                725                 730                 735
Tyr Lys Glu Ile Pro Met Ser Val Pro Glu Ile Ser Ser Ser Gln His
            740                 745                 750
Pro Val Lys Thr Gly Leu Ser Asp Ala Phe Met Ile Leu Asn Pro Ser
        755                 760                 765
Pro Asp Val Pro Glu Ser Arg Arg Arg Ser Ile Phe Glu Tyr His Arg
    770                 775                 780
Ile Glu Leu Asp Pro Ser Lys Val Thr Ser Met Ser Ala Val Glu Phe
785                 790                 795                 800
Thr Pro Leu Pro Thr Cys Leu Gln His Arg Ser Cys Asp Ala Cys Met
                805                 810                 815
Ser Ser Asp Leu Thr Phe Asn Cys Ser Trp Cys His Val Leu Gln Arg
            820                 825                 830
Cys Ser Ser Gly Phe Asp Arg Tyr Arg Gln Glu Trp Met Asp Tyr Gly
        835                 840                 845
```

```
Cys Ala Gln Glu Ala Glu Gly Arg Met Cys Glu Asp Phe Gln Asp Glu
    850                 855                 860
Asp His Asp Ser Ala Ser Pro Asp Thr Ser Phe Ser Pro Tyr Asp Gly
865                 870                 875                 880
Asp Leu Thr Thr Thr Ser Ser Ser Leu Phe Ile Asp Ser Leu Thr Thr
                885                 890                 895
Glu Asp Asp Thr Lys Leu Asn Pro Tyr Ala Gly Gly Asp Gly Leu Gln
            900                 905                 910
Asn Asn Leu Ser Pro Lys Thr Lys Gly Thr Pro Val His Leu Gly Thr
        915                 920                 925
Ile Val Gly Ile Val Leu Ala Val Leu Leu Val Ala Ala Ile Ile Leu
    930                 935                 940
Ala Gly Ile Tyr Ile Asn Gly His Pro Thr Ser Asn Ala Ala Leu Phe
945                 950                 955                 960
Phe Ile Glu Arg Arg Pro His His Trp Pro Ala Met Lys Phe Arg Ser
                965                 970                 975
His Pro Asp His Ser Thr Tyr Ala Glu Val Glu Pro Ser Gly His Glu
            980                 985                 990
Lys Glu Gly Phe Met Glu Ala Glu Gln Cys
        995                 1000
```

<210> 180
<211> 5680
<212> DNA
<213> Homo sapiens

<400> 180

```
gggcgatggg ttgatgggcg ccgggggacg caggatgcgg ggggcgcccg cgcgcctgct      60
gctgccgctg ctgccgtggc tcctgctgct cctggcgccc gaggctcggg gcgcgcccgg     120
ctgcccgcta tccatccgca gctgcaagtg ctcgggggag cggcccaagg ggctgagcgg     180
cggcgtccct ggcccggctc ggcggagggt ggtgtgcagc ggcggggacc tcccggagcc     240
tcccgagccc ggccttctgc ctaacggcac cgttaccctg ctcttgagca ataacaagat     300
cacggggctc cgcaatggct ccttcctggg actgtcactg ctggagaagc tggacctgag     360
gaacaacatc atcagcacag tgcagccggg cgccttcctg ggcctggggg agctgaagcg     420
tttagatctc tccaacaacc ggattggctg tctcacctcc gagaccttcc agggcctccc     480
caggcttctc cgactaaaca tatctggaaa catcttctcc agtctgcaac ctggggtctt     540
tgatgagctg ccagccctta aggttgtgga cttgggcacc gagttcctga cctgtgactg     600
ccacctgcgc tggctgctgc cctgggccca gaatcgctcc ctgcagctgt cggaacacac     660
gctctgtgct taccccagtg ccctgcatgc tcaggccctg ggcagcctcc aggaggccca     720
gctctgctgc gaggggggccc tggagctgca cacacaccac ctcatcccgt ccctacgcca     780
agtggtgttc caggggggatc ggctgccctt ccagtgctct gccagctacc tgggcaacga     840
cacccgcatc cgctggtacc acaaccgagc ccctgtggag ggtgatgagc aggcgggcat     900
cctcctggcc gagagcctca tccacgactg caccttcatc accagtgagc tgacgctgtc     960
tcacatcggc gtgtgggcct caggcgagtg ggagtgcacc gtgtccatgg cccaaggcaa    1020
cgccagcaag aaggtggaga tcgtggtgct ggagacctct gcctcctact gccccgccga    1080
gcgtgttgcc aacaaccgcg gggacttcag gtggccccga actctggctg gcatcacagc    1140
ctaccagtcc tgcctgcagt atcccttcac ctcagtgccc ctgggcgggg gtgccccggg    1200
cacccgagcc tcccgccggt gtgaccgtgc cggccgctgg gagccagggg actactccca    1260
ctgtctctac accaacgaca tcaccagggt gctgtacacc ttcgtgctga tgcccatcaa    1320
tgcctccaat gcgctgaccc tggctcacca gctgcgcgtg tacacagccg aggccgctag    1380
cttttcagac atgatggatg tagtctatgt ggctcagatg atccagaaat ttttgggtta    1440
tgtcgaccag atcaaagagc tggtagaggt gatggtggac atggccagca acctgatgct    1500
ggtggacgag cacctgctgt ggctggccca gcgcgaggac aaggcctgca gccgcatcgt    1560
gggtgccctg gagcgcattg gggggccgc cctcagcccc catgcccagc acatctcagt    1620
gaatgcgagg aacgtggcat tggaggccta cctcatcaag ccgcacagct acgtgggcct    1680
gacctgcaca gccttccaga ggagggaggg aggggtgccg ggcacacggc caggaagccc    1740
tggccagaac cccccacctg agcccgagcc cccagctgac cagcagctcc gcttccgctg    1800
caccaccggg aggcccaatg tttctctgtc gtccttccac atcaagaaca gcgtggccct    1860
ggcctccatc cagctgcccc cgagtctatt ctcatccctt ccggctgccc tggctccccc    1920
ggtgccccca gactgcaccc tgcaactgct cgtcttccga aatggccgcc tcttccacag    1980
ccacagcaac acctcccgcc ctggagctgc tgggcctggc aagaggcgtg gcgtggccac    2040
```

ccccgtcatc ttcgcaggaa ccagtggctg tggcgtggga aacctgacag agccagtggc 2100
cgtttcgctg cggcactggg ctgagggagc cgaacctgtg gccgcttggt ggagccagga 2160
ggggcccggg gaggctgggg gctggacctc ggagggctgc cagctccgct ccagccagcc 2220
caatgtcagc gccctgcact gccagcactt gggcaatgtg gccgtgctca tggagctgag 2280
cgcctttccc agggaggtgg ggggcgccgg ggcagggctg caccccgtgg tataccctg 2340
cacggccttg ctgctgctct gcctcttcgc caccatcatc acctacatcc tcaaccacag 2400
ctccatccgt gtgtcccgga aaggctggca catgctgctg aacttgtgct tccacatagc 2460
catgacctct gctgtctttg cgggggggcat cacactcacc aactaccaga tggtctgcca 2520
ggcggtgggc atcaccctgc actactcctc cctatccacg ctgctctgga tgggcgtgaa 2580
ggcgcgagtg ctccataagg agctcacctg gagggcaccc cctccgcaag aaggggaccc 2640
cgctctgcct actcccagtc ctatgctccg gttctatttg atcgctggag ggattccact 2700
cattatctgt ggcatcacag ctgcagtcaa catccacaac taccgggacc acagccccta 2760
ctgctggctg gtgtggcgtc caagccttgg cgccttctac atccctgtgg ctttgattct 2820
gctcatcacc tggatctatt tcctgtgcgc cgggctacgc ttacggggtc ctctggcaca 2880
gaaccccaag gcgggcaaca gcagggcctc cctggaggca ggggaggagc tgaggggttc 2940
caccaggctc aggggcagcg gccccctcct gagtgactca ggttcccttc ttgctactgg 3000
gagcgcgcga gtggggacgc ccgggccccc ggaggatggt gacagcctct attctccggg 3060
agtccagcta ggggcgctgg tgaccacgca cttcctgtac ttggccatgt gggcctgcgg 3120
ggctctggca gtgtcccagc gctggctgcc ccgggtggtg tgcagctgct tgtacggggt 3180
ggcagcctcc gccctgggcc tcttcgtctt cactcaccac tgtgccaggc ggagggacgt 3240
gagagcctcg tggcgcgcct gctgcccccc tgcctctccc gcggcccccc atgccccgcc 3300
ccgggccctg cccgccgccg cagaggacgg ttccccggtg ttcggggagg ggccccctc 3360
cctcaagtcc tccccaagcg gcagcagcgg ccatccgctg gctctgggcc cctgcaagct 3420
caccaacctg cagctggccc agagtcaggt gtgcgaggcg ggggcggcgg ccggcgggga 3480
aggagagccg gagccggcgg gcacccgggg aaacctcgcc caccgccacc ccaacaacgt 3540
gcaccacggg cgtcgggcgc acaagagccg ggccaaggga caccgcgcgg gggaggcctg 3600
cggcaagaac cggctcaagg ccctgcgcgg gggcgcggcg ggggcgctgg agctgctgtc 3660
cagcgagagc ggtagtctgc acaacagccc caccgacagc tacctgggca gcagccgcaa 3720
cagcccgggc gccggcctgc agctggaagg cgagcccatg ctcacgccgt ccgagggcag 3780
cgacaccagc gccgcgccgc tttctgaggc gggccgggca ggccagcgcc gcagcgccag 3840
ccgcgacagt ctcaaggggcg gcggcgcgct ggagaaggag agccatcgcc gctcgtaccc 3900
gctcaacgcc gccagcctaa acggcgcccc caaggggggc aagtacgacg acgtcaccct 3960
gatgggcgcg gaggtagcca gcggcggctg catgaagacc ggactctgga agagcgaaac 4020
taccgtctaa ggtggggcgg gcgacgcggt agacgggctg gccacgcggc tcgttccccc 4080
gctcctcggg gccctccaag gtgtctccgt agtcagcagg ttggaggcag aggagccgat 4140
ggctggagga agcccacagg cggatgttcc ccacttgcct agagggcatc cctctggggt 4200
agcgacagac aatcccagaa acacgcataa tacatttccg tccagcccgg ggcagtctga 4260
ctgtcggtgc cctcccagga acggggaagg cctccgtctg tgtgaaaggg cacagcacat 4320
cccaggtgca ccctccccaa gtactcccac cccgcctact gtccatgcgg cctcactggg 4380
ggccatcagc ctcaccagca aagcagagat gagagcgtgg gaactgtgtt ctttcctccc 4440
tgccctctac tgatttcagc ccagcccctg cctagatcct aggtcccttt tcctcccgag 4500
tttggctggc acgagagcta gcccagcaca tgaagcaggt gatgttaagt cacaaggtgc 4560
tgcttttcag atccactatg caagagggga gggtggggcc acgtgaaagg cagctctaga 4620
catcaaccag tcctggggga ggggagtggg aaccgggcac aactaggaac aatgccacca 4680
ttcccacagg agtggtactt aaaccagaca gcagggttca gaggtggcac accgggacaa 4740
agctgaggcc ctgcacctca acagctgact gccaggtgcc tgtgggtgaa ctgaggggag 4800
tagagggaga gggcaggtgg aactggggca gaatctagtc atgccctaaa gctagtcctg 4860
taaacaatgg tgccccagaa agctgcaggt ggtgtttgga gaagcagtta cttttcagtt 4920
acaagaccca tctccctagt ctcagcctta caacaccacg ggactaagga agagcacttc 4980
cttgcctccg taaggccaga ggaagaacca tcccaatcat ttgatctcca gctccacagt 5040
agagagaaac ctacaaaatg tcaaaccagc ttcccgactc ccaggagctc aagccaagcc 5100
cagaggcagt ggctggggtc cctgcaggtc atgaggggcc tatgccttta ctccttttaa 5160
acaccagcac ccgtcttttc cccaacctaa aaccaaccac cagcatttca ctacaggacc 5220
aaatggaaac cgagggaacc ctgggtcttg ggaagaacaa caggaaacca aggtctgacc 5280
tagggttccc tcccagtctt cacatcactc tggcctcatc accaaggtga cagaggacac 5340
aggggagggg gaaaacccac acacactcct tggaatgggt cctgttattt atgcttgctg 5400
cacagacata ttagaagaaa aaaaaaagct ttgtattatt cttccacata tgctggctgc 5460
tgtttacaca ccctgccaat gccttagcac tggagagctt tttgcaatat gctggggaaa 5520
ggggagggag ggaatgaaag tgccaaagaa aacatgtttt taagaactcg ggttttatac 5580
aatagaatgt tttctagcag atgcctcttg ttttaatata ttaaaatttt gcaaagccct 5640
ttgagctaca aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 5680

<210> 181
<211> 2157
<212> DNA
<213> Homo sapiens

<400> 181
ggcggcggca tggcgaggtt cccgaaggcc gacctggccg ctgcaggagt tatgttactt 60
tgccacttct tcacggacca gtttcagttc gccgatggga aacccggaga ccaaatcctt 120
gattggcagt atggagttac tcaggccttc cctcacacag aggaggaggt ggaagttgat 180
tcacacgcgt acagccacag gtggaaaaga aacttggact ttctcaaggc ggtagacacg 240
aaccgagcaa gcgtcggcca agactctcct gagcccagaa gcttcacaga cctgctgctg 300
gatgatgggc aggacaataa cactcagatc gaggaggata cagaccacaa ttactatata 360
tctcgaatat atggtccatc tgattctgcc agccgggatt tatgggtgaa catagaccaa 420
atggaaaaag ataaagtgaa gattcatgga atattgtcca atactcatcg gcaagctgca 480
agagtgaatc tgtccttcga ttttccattt tatggccact tcctacgtga aatcactgtg 540
gcaaccgggg gtttcatata cactggagaa gtcgtacatc gaatgctaac agccacacag 600
tacatagcac ctttaatggc aaatttcgat cccagtgtat ccagaaattc aactgtcaga 660
tattttgata atggcacagc acttgtggtc cagtgggacc atgtacatct ccaggataat 720
tataacctgg gaagcttcac attccaggca accctgctca tggatggacg aatcatcttt 780
ggatacaaag aaattcctgt cttggtcaca cagataagtt caaccaatca tccagtgaaa 840
gtcggactgt ccgatgcatt tgtcgttgtc cacaggatcc aacaaattcc caatgttcga 900
agaagaacaa tttatgaata ccaccgagta gagctacaaa tgtcaaaaat taccaacatt 960
tcggctgtgg agatgacccc attacccaca tgcctccagt ttaacagatg tggcccctgt 1020
gtatcttctc agattggctt caactgcagt tggtgtagta aacttcaaag atgttccagt 1080
ggatttgatc gtcatcggca ggactgggtg gacagtggat gccctgaaga gtcaaaagag 1140
aagatgtgtg agaatacaga accagtggaa acttcttctc gaaccaccac aaccatagga 1200
gcgacaacca cccagttcag ggtcctaact accaccagaa gagcagtgac ttctcagttt 1260
cccaccagcc tccctacaga agatgatacc aagatagcac tacatctaaa agataatgga 1320
gcttctacag atgacagtgc agctgagaag aaaggggaa ccctccacgc tggcctcatc 1380
gttggaatcc tcatcctggt cctcattgta gccacagcca ttcttgtgac agtctatatg 1440
tatcaccacc caacatcagc agccagcatc ttctttattg agagacgccc aagcagatgg 1500
cctgcgatga agtttagaag aggctctgga catcctgcct atgctgaagt tgaaccagtt 1560
ggagagaaag aaggctttat tgtatcagag cagtgctaaa atttctagga cagaacaaca 1620
ccagtactgg tttacaggtg ttaagactaa aattttgcct atacctttaa gacaaacaaa 1680
caaacacaca cacaaacaag ctctaagctg ctgtagcctg aagaagacaa gatttctgga 1740
caagctcagc ccaggaaaca aagggtaaac aaaaaactaa aacttataca agataccatt 1800
tacactgaac atagaattcc ctagtggaat gtcatctata gttcactcgg aacatctccc 1860
gtggacttat ctgaagtatg acaagattat aatgcttttg gcttaggtgc agggttgcaa 1920
agggatcaga aaaaaaaaat cataataaag ctttagttca tgagggatcg acacctttgg 1980
ttcaaatgtt ctctgatgtc tcaaagataa ctgttttcca aagcctgaac cctttcactc 2040
aaaagagcaa tgatgaatgt ctcaagattg ctaagaaaaa cagcccatgc aagagtgaga 2100
acaaacacaa aataagagat tttctacatt ttcaaaaaaa aaaaaaaaaa aaaaaaa 2157

<210> 182
<211> 2535
<212> DNA
<213> Mus musculus

<400> 182
gtcgcgatgc tgctgcgcct gctgctggcc tgggtggccg cggtgcccgc actgggccag 60
gtcccctgga cgccggagcc tcgagccgcg tgcggcccca gcagctgcta cgcgctcttt 120
ccccggcgcc gcacattcct ggaagcttgg cgggcgtgcc gcgaattggg gggcaacctg 180
gccacaccgc ggaccccaga ggaggcccag cgtgtggaca gcctggtggg ggtcgggccg 240
gccaacgggc tgctatggat tgggttgcag cggcaggcta ggcaatgcca gccgcagcgc 300
ccactgcggg gcttcatatg gaccacggga gaccaggaca ccgccttcac caactgggcc 360
cagccggcta cggaaggacc ctgcccagcc cagcgctgtg cagcccttga ggccagcgga 420
gagcatcgct ggctcgaagg ctcgtgcaca ctggctgtcg atggctacct ctgccagttt 480
ggttttgagg gtgcctgccc tgccttgccg cttgaggtgg gtcaggccgg tcccgctgtc 540

tacaccacac ccttcaacct ggtttccagc gagttcgaat ggctgccctt tggctccgtg 600
gcagctgtgc agtgccaagc tggcagggga gcttctctgc tgtgcgtgaa acagccttca 660
ggtggcgtgg gctggtccca gactggcccg ctgtgcccag ggactggctg tggtcctgac 720
aatgggggtt gcgaacatga gtgtgtggaa gaggtggacg gtgctgtgtc ctgccgctgc 780
agtgaaggct tccgtctagc agcagatggg cacagttgtg aagacccctg tgcccaggcc 840
ccctgtgagc agcagtgtga acctggaggg ccacaaggct atagctgcca ctgtcgcctt 900
ggcttccggc cagctgagga tgatccacac cgctgcgtgg acacggatga gtgccagatt 960
gctggtgtgt gccagcagat gtgtgtcaac tatgttggtg gctttgagtg ttactgcagc 1020
gagggtcacg agcttgaggc agatggtatc agctgtagcc ctgcaggagc catgggtgcc 1080
caggcttccc aggatctcag agatgagttg ctggatgatg gagaagaagg ggaggatgaa 1140
gaggagccct gggaggactt tgatggcacc tggacagagg aacaggggat cctatggctg 1200
gcacctacac atccacctga ctttggcctg ccctataggc ccaacttccc acaggatgga 1260
gagcctcaga gattgcacct ggagcctacc tggccacccc cacttagtgc ccccaggggc 1320
ccctaccact cctcagtggt gtctgccaca cggcccatgg tgatctctgc cactcgaccc 1380
acactacctt ctgcccacaa gacctctgtt atttcagcta cacgcccacc cctgagccct 1440
gtccacccac ctgccatggc ccctgccaca cctccagctg tgttctctga gcaccagatc 1500
cccaaaatca aggccaatta tccagacctg ccttttggcc acaagcctgg gataacctcg 1560
gccactcacc cagcacggtc tcctccgtac cagccccca ttatctcaac caactatccc 1620
caagtcttcc ctccccacca ggcccctatg tctccagata cccacactat cacttatttg 1680
cctccagtcc cccctcacct tgatcctggg gataccactt ctaaagccca tcaacaccct 1740
ttgctcccag atgctccagg tatcagaacc caggcccccc agctttctgt ctcagctctc 1800
cagccccctc ttcctaccaa ctccaggtct tctgtccatg aaactcctgt gcctgctgcc 1860
aaccagcccc cagccttccc ttcttctccc ctccccctc agaggcccac taaccagacc 1920
tcatctatca gccctacaca ttcctattcc agagcccctc tagtcccaag ggaaggagtt 1980
cccagtccca aatcagtgcc acagctgccc tcggtgccct ccacagcagc tccaacagcc 2040
ctggcagagt caggtcttgc aggccaaagc caaagggatg accgctggct gctggtggca 2100
ctcctggtgc caacatgtgt cttcttggtg gtgctgcttg ccctgggcat tgtgtactgc 2160
actcgctgtg gctcccacgc acccaacaag cggatcacgg actgctatcg ctgggtcaca 2220
catgctggga acaagagctc aacagaaccc atgccccca gaggcagcct tacaggggta 2280
cagacctgta gaaccagtgt gtgatggggt gcagatgccc ctttgtggga tagaagaaaa 2340
ggacttgctt tggacacatg gctgagacca caccaaggac ttatgggggc tgcccagctg 2400
acagaggagg ttctgttctt tgagcccagc atccatggca aaggacacac caggactcca 2460
ggacctcaag gggtgggtgc tgggatcttc tccaataaat ggggtgccaa cctcacccaa 2520
aaaaaaaaaa aaaaa 2535

<210> 183
<211> 5520
<212> DNA
<213> Mus musculus

<400> 183
gggcgcccgg gactcccgct gagcactcct cccgcacgcc cgggtccctc cggccggcga 60
gccgtccggc ccctgcgctg taggtccccg cggggcgatg ggttgatggg cgcgggggga 120
cgcaggatgc cggtgcctcc cgcgcgtttg ctgctgctgc cgctgctgcc ttgtcttctg 180
ctcctggctc ctggaactcg gggtgcgcct ggctgcccgg tccctatccg cggttgcaag 240
tgctctgggg agcggcccaa gggactaagt ggcggcgccc acaacccggc tcgaaggagg 300
gtggtgtgcg gcggtgggga tctccccgaa cctccagatc ccggccttct gccaaacggc 360
accatcacct tgctcttgag caacaacaag attactgggc tccgcaatgg atccttcttg 420
ggactgtccc tgttggagaa gttggacctg aggagcaatg tcatcagcac tgtgcagcct 480
ggagccttcc taggtctggg agagctaaaa cgcttagatc tctccaacaa tcggattggc 540
tgtctcacct ctgagacatt tcaagggctc cctagacttc tcagactaaa catatctgga 600
aacatctact ctagtctgca acctggggtc tttgatgagc tgccagccct taagattgtg 660
gactttggta ctgagtttct gacctgtgac tgccgcctgc gctggctgct gccctgggcc 720
cggaatcact ccctgcagct gtctgagcgc acactctgtg cctaccccag tgccctgcac 780
gcccatgccc tgagcagcct ccaggagtcc cagcttcgct gtgaaggggc cctggaactg 840
cacacccact acctcatccc atcccttcgc caagtggtgt tccagggtga ccgcctgccc 900
ttccagtgct cagccagcta cttgggcaac gatacccgga tccactggta ccacaatggg 960
gctcctatgg agagcgatga gcaggccggc atcgtccttg ctgaaaacct tatccatgat 1020
tgcaccttca tcaccagtga gctgaccctg tctcacattg gtgtgtgggc ctctggtgaa 1080
tgggagtgct ccgtgtccac agtccaaggc aacaccagca agaaggtgga gatagtagtg 1140
ctggagacct ctgcctccta ctgccctgca gagcgggtga ccaacaaccg tggggacttc 1200

aggtggcccc gaaccttggc tggcatcacg gcttaccagt cctgtttaca gtacccttc 1260
acctctgtgc ccttgagtgg gggagccccg ggtacccgag cctcacgcag gtgtgaccga 1320
gctggccgct gggagccagg ggactactcg cactgtctgt acaccaatga catcactcgg 1380
gtgctctaca cctttgtgct gatgcccatc aacgcctcca atgcattgac gttggcccac 1440
cagctgcgag tgtataccgc agaggccgcc agcttctcag acatgatgga cgtggtctat 1500
gtggctcaga tgatccagaa gtttttgggt tacgttgacc agatcaagga gctggtggag 1560
gtgatggtgg acatggccag caacctgatg ctggtggatg agcaccttct gtggctggcc 1620
cagagagaag acaaagcctg cagtggcatt gtgggtgccc tggagcgaat cggaggagct 1680
gctcttagcc cccatgccca gcacatctct gtgaattcaa gaaatgtggc actggaggcc 1740
tacctcatca agcctcacag ctacgtgggt ctgacttgca cggctttcca gaggagggag 1800
gtaggagtgt cgggtgcaca gccaagcagc gtcggccagg atgccccagt ggagcccgaa 1860
cccctagctg atcagcagct taggttccgc tgcaccactg ggaggcccaa catttctctg 1920
tcatccttcc acatcaagaa tagcgtggcc ctggcctcca tccagctgcc ccccagcctg 1980
ttctcaaccc ttccggctgc cctggctccc ccagtccctc cagattgcac cctgcaactg 2040
ctggtcttca gaaatggccg tcttttccgc agccacggca acaacacttc ccgtcctgga 2100
gcagctgggc ctggcaagag gcgtggtgtg gccaccccag tcatatttgc aggaaccagt 2160
ggctgtggtg tgggaaactt gacggagccc gtggctgtgt cactgaggca ctgggctgaa 2220
ggagctgacc ccatggcagc ttggtggaac caggacgggc ctggaggctg gagttctgaa 2280
ggctgcaggc tccgctacag ccagcccaac gtcagctccc tgtactgcca gcacttgggc 2340
aatgtggccg tgcttatgga gctgaatgca ttcccgcggg aggcaggagg ctctggggct 2400
gggttgcatc ccgtcgtgta cccctgcacg gctttgctgc tactctgtct cttctccacc 2460
atcatcacgt acatcctcaa ccacagctcc atccacgtgt cccggaaggg ttggcacatg 2520
ctgctgaacc tttgtttcca tatggccatg acctctgctg tcttcgtggg gggcgtcacg 2580
ctcaccaact accaaatggt ttgtcaagcg gtgggcatca ctctgcacta ctcttccttg 2640
tcgtcactgc tctggatggg ggtcaaggct cgagtcctcc acaaggagct tagttggagg 2700
gcacccccctc tggaagaagg ggaagcagct ccgcctggtc ctcgccccat gctccggttc 2760
tacttgattg ctggagggat ccccctcata atctgcggca tcaccgctgc ggtcaacatc 2820
cacaactacc gggaccacag tccctattgt tggctggtgt ggcgtccaag ccttggtgcc 2880
ttctacatac cggtggcgtt gattctgcct atcacctgga tctacttctt gtgtgcaggc 2940
cttcacttac ggagccatgt ggcccagaat ccaaagcagg gtaacaggat ctctctggag 3000
ccaggggaag agctgagggg ttccaccagg ctcaggagta gtggcgtcct cctgaatgac 3060
tctggttctc ttttggctac agttagcgca ggagtaggga cacctgcgcc cccagaggat 3120
ggtgatggcg tatattctcc tggagtccag ctgggggcgc tgatgaccac gcatttcctg 3180
tacctggcta tgtgggcttg tggtgccttg gcggtgtctc agcgctggct gccccgagtg 3240
gtgtgtagct gtctgtacgg cgtggcagct tcagctcttg gtctgtttgt cttcactcac 3300
cactgtgcca gacgtagaga tgtccgggct tcctggcgcg cctgctgccc tcctgcttcg 3360
ccctcggcct cccatgtccc agcccgggcc ctgccgactg ctacagagga tggatcccca 3420
gtgttggggg agggaccagc ctctctcaag tcctccccaa gtggcagcag tggccgcgcg 3480
ccgccacccc cctgcaaact caccaatctg caggtggccc agagtcaggt gtgcgaggca 3540
agcgtggccg cccgcggaga tggagagcca gagcccaccg gctcccgtgg cagcctagct 3600
ccccggcacc ataacaacct gcatcatggg cgccgagtac acaagagtcg ggccaagggg 3660
caccgagccg gagagactgg tggtaagagc cggctcaagg cgttgcgcgc gggcacgtcc 3720
ccaggagctc ccgagctgtt gtccagtgag agcggcagtt tgcacaacag cccgtctgac 3780
agctacccgg gcagcagccg caacagtcca ggcgacggtc ttccactcga gggtgagccc 3840
atgcttacgc cgtcggaggg cagtgacaca agcgccgcgc caatcgctga gacggggcgc 3900
cccgggcagc gccgcagcgc cagccgtgac aacctcaagg gcagcggcag cgcgctggag 3960
agggagagca agcgccgctc ctatccgctc aacactacca gtcttaacgg tgcccccaaa 4020
gggggcaagt atgaggatgc cagtgtaact ggtgcagagg ccatagcggg aggctccatg 4080
aagactggcc tctggaaaag cgagaccacc gtctaggtcc agatttagga tgggcgggtc 4140
acgcgggctt gtttactccc aaatcctctt gggcggtcca agccgtctac tgatgtgtat 4200
gtaggtttaa ggcggccatg ctgatgctgc ccttgagtcc accatcatta gttacccagg 4260
ctagggaaag gggagggagg cagatgcttg cccctactgt ggactatccc tcagcagtag 4320
cgacagacaa tcccagacca gttttggtgg ccaagttctt ggtatcctgc caggtaggca 4380
taaaacatcc atcggtccct agggtaaccc ataaactgag ttgaagagcc cagcccaggt 4440
aggctcagga aatgagaggg agaccgggga actgggttct ccacaccagc ccggcaaggt 4500
atcctgtgac tgccaagatc ccaggcctct ctcccagttt tggcttggga aaccatccca 4560
gcaggtgagc caggggcgt aacaggtgct gcctttcaga ttaactatgc aaggggatg 4620
ggggtgggag gggtagggca gtgtggtggg cagctctaga gatgagcttg tccctcagga 4680
ggcaggcagg tgggaaaagg tgcattaggg agacagaatc cctaactatg ggagtggtac 4740
acagtttttc cagcagagtt cacagcaaac cctgaacccc cacacacctg ggaagtgata 4800
ctgccagcag gtgccttaag actcaagggg agggagctga tatgtggatc tcacaaccta 4860

tacagtggtc tgcaagtggc tccacttagc tgcttaatta taatacccac tgtctgttcc 4920
cagccctcca actccggggg actgagggga aatgcctcca tgaggctcct gtggcaaagc 4980
catgctaata atctgacttc taacctcagt tagaaaccca aaatgccaaa ccacctccta 5040
actcgctgaa acccaaccac actctgaggc agcgcctggg tccaggctgc tcaagagcct 5100
atgcttccag cccccatttt cctcaactca agatgccttt taatacagaa ctacatggaa 5160
gtagaggaac ccttgggcac tgggaagtag cagggatccc agctctgatc aagtgagagg 5220
acagagcagg gaagacgcca tactcgctga gatgggtccc attatttatg ctttgctgca 5280
cagacactat tagaggaaaa gctttgtatt actctcccac gtgagctgct gctgtttacc 5340
ctgccaatgc cttagcactg gagagctttt tgcaatatgc tggggaaagg ggagggaggg 5400
gatgaagtgc caaagaaaac acattttaaa agctctggtt ttatacaata gaatgttttc 5460
cagcagatgc ctctttgttt taatatatta aaatcttgca aaaaaaaaaa aaaaaaaaaa 5520

<210> 184
<211> 2833
<212> DNA
<213> Mus musculus

<400> 184
cggggctgct ccctctgcag ccgccgccgc cgccgcgcag acccggaggt cgtccgcgcc 60
caccatgcga gctcagctct ggttgctgca gttgctgcta ctccgcgggg ccgcgcgcgc 120
gctcagtccc gcaacacccg caggtcacaa tgaaggtcaa gactctgcat ggactgccaa 180
gaggaccagg caaggctgga gtcggagacc ccgagagagc cccgcgcagg tgttgaagcc 240
aggcaagacc cagctaagcc aggacttggg tgggggctcc ctggccatcg acacacttcc 300
ggacaacagg actcgggtgg tggaggacaa ccataactac tacgtgtccc gtgtctacgg 360
ccctggtgag aaacaaagcc aggatctgtg ggtggacctg gctgtggcca accggagtca 420
tgtgaagatc cacaggatcc tctccagttc tcaccgacag gcttcaagag tggtcttgtc 480
ctttgatttc cctttctatg ggcatcctct gcggcagatc accatagcaa ccggaggctt 540
catcttcatg ggggacatgc tccaccggat gctcacagct acgcagtatg tggcacccct 600
gatggccaac ttcaaccccg gctactctga caactccacg gttgcttact ttgacaatgg 660
gaccgttttt gtggttcagt gggatcatgt ttacctccag gaccgggagg acaggggcag 720
cttcaccttc caggcggccc tacaccgaga tggccgcatt gtcttcggct acaaagagat 780
ccccatggct gtcctggata tcagctctgc ccagcaccct gtcaaggcag gcctgtccga 840
cgctttcatg attctcaatt catccccaga ggtgccagag tctcagagac ggaccatttt 900
cgaataccac cgtgtggaac tggactccag caagatcacc accacctcgg ccgtggagtt 960
caccccgttg ccaacctgcc tccagcatca gagttgcgac acctgcgtgt cctcgaatct 1020
aaccttcaac tgcagctggt gccatgtcct gcagaggtgt tccagtggct ttgaccgata 1080
ccgccaagaa tggctgacct acggctgtgc ccaggaggca gaaggcaaga catgcgagga 1140
cttccaggat gatagccact actcagcctc ccctgacagc tccttcagcc cctttaatgg 1200
cgactccact acctcttcct ccctcttcat tgacagcctc accacagaag atgacaccaa 1260
gttgaatccc tacgcagaag gagacggcct tccggaccac tcatctccga agtccaaggg 1320
tcctcccgtg cacctgggca ccatcgtggg tatcgtgctt gctgtactcc tggtagcggc 1380
catcatcctg gctgggattt acatcagtgg ccaccctaat tccaatgctg cactcttctt 1440
catcgagcgg agacctcacc actggccagc catgaagttc cataaccacc ccaaccactc 1500
tacctacacc gaggtagagc cctccgggca cgagaaggaa ggcttcgtgg aggccgagca 1560
gtgctgagag agcatcgggc cagagacctg gagatggcat gaaagacaag tcacagcaca 1620
gagaagtgat ttttttcct ggcttcctcg gagctggccc tgggccagga agacaagaca 1680
acagcttgtg gtgccaacac tacagtttgg tctgcacacc ccatttaaag ggggctcagt 1740
aatacaactg cgaaggctcc ttggggaaca ctgacctcaa gagttccctg tttcaatggg 1800
aggaggcttc gtttggggtc tctcagtggt ctgcagctat ggcggagccc ctgcccactg 1860
gagacagcct cctgtgttcc tcctgctcac tgaagcccac actgggccat tgcattccgg 1920
ggtctataga ttcaagagct ggtcttgcta gctatggagt cagtgccctt ggctccaaac 1980
tttgtggctt agaagcctga agaaggggat cccttccctc cgagagcgct taaccctgag 2040
atgcgctaac agagagaaaa gtaaccttgg ggaacttgca tttttctggc cttggtcctt 2100
tgcttcattg tttttttttgc agaggccggg gccaacatcc gagcactgta gcctgcagct 2160
cattctgtac cctgccctgc cctgcccctc agcctccacc ctgcaagctg gtcttgcatg 2220
gctgccagta atgagtgggg cccttactgt gccatgtgtc tggtgcctgc attactcgtt 2280
aacctgttct gttatcaacg gcagtagttt ccttcaaaga gggggacaat ttacctggct 2340
cctgttttaa cttggctgac cagagtcgag ttcttgtaac cattaaaaac aactaggggg 2400

ccgggtgtgg tggtgctcac actcaggagg ctgagctctg agatcaaggc cagcctggtc 2460
tacagagaga gcctgtcttg aagaaacaag acaaatgggg ggctagaggt ttccctgaga 2520
caccccctgcc ttagcaaggg gctccagttg gatcccgttg aagcacggtg gccgcgaagg 2580
tagggcagag aaatctggta tgggagggag agaccttgac ctggaaagcg gcctccatct 2640
ctccagctct gcaaagagct ttgggaactg ggagttgacg ttcccacact cagcctggtt 2700
ttaagggact tctgtccccg tggtggacca ggacggcttc taaaggacaa tgaaaaccta 2760
gagctcacct tcatcccaaa gaagcgtcat cagcaaataa ataaggtata gccctcaaaa 2820
aaaaaaaaaa aaa 2833

<210> 185
<211> 2009
<212> DNA
<213> Mus musculus

<400> 185
gagagaggtc gcggcagcgg catggcaagg ttccggaggg ccgacctggc cgcagcagga 60
gttatgttac tttgtcactt tttaacagac cggttccact tcgcccacgg ggagcctgga 120
caccatacca atgattggat ttatgaagtt acaaacgctt ttccttggaa tgaagagggg 180
gtagaagtgg actctcaagc atacaaccac aggtggaaaa gaaatgtgga ccctttaag 240
gcagtagaca caaacagagc cagcatgggc caagcctctc cagagtccaa agggttcact 300
gacctgctac tggatgacgg acaggacaat aacacccaga tagaggagga cacggatcac 360
aattactaca tttctcggat atatggtcca gcggattctg ccagccggga tctgtgggtt 420
aacatagacc aaatggaaaa agacaaagtg aagattcacg ggatactttc caacactcat 480
cggcaagctg caagagtgaa tctgtccttc gattttccat tttatggtca ttttctaaat 540
gaagtcactg tggcaactgg gggtttcata tatactggag aagttgtaca tcgaatgctc 600
acagctacac agtatatagc tcctttaatg gcaaattttg atcccagtgt atccagaaat 660
tcaactgtca gatattttga taatggcaca gctcttgttg tccagtggga ccatgtccac 720
ctgcaggata attacaacct gggaagcttc acattccagg ccacactcct catggacggg 780
cgcatcatct ttggatacaa agaaatccct gtcttggtca cacagataag ttctaccaac 840
catccagtga aagtcgggtt gtctgatgca tttgtcgtgg tccacaggat ccagcaaata 900
cccaatgttc gaagaagaac aatttatgaa tatcaccgag tagaactaca aatgtccaaa 960
attaccaaca tctcagctgt ggagatgact ccacttccca catgtctcca gttcaatggt 1020
tgtggccctt gtgtgtcctc gcagattggt ttcaactgca gttggtgcag caaacttcaa 1080
agatgctcca gtggatttga tcgccatcgg caggactggg tggacagtgg atgcccggaa 1140
gaggtacagt caaaagagaa gatgtgtgag aagacagagc caggagagac gtctcaaact 1200
accacgacct cccacacgac caccatgcaa ttcagggtcc tgaccaccac caggagagct 1260
gtgacatcgc agatgcctac cagcctgcct acagaagatg acacgaagat agccctacat 1320
ctcaaagaca gtggagcctc cacagatgac agtgcagctg agaagaaagg aggaaccctc 1380
catgcaggcc tcattgttgg aattctcatc ttggtcctca ttatagcagc ggccattctg 1440
gtgacagtgt atatgtatca ccatccaaca tcagcagcca gcatcttctt cattgagaga 1500
cgcccaagca gatggccagc aatgaagttt cgaagaggct caggacaccc tgcctatgca 1560
gaagttgaac cagttggaga gaaagaaggt tttattgtat cagagcagtg ctaaaatttt 1620
aggacagagc agcaccagta ctggcttaca ggtgttaaga ctaaaacttt gcttatgcat 1680
ttaagacaaa cagacacaca acccacaacc acacacaaag gagccctaaa ctgctgtaga 1740
cagaagggcg acgagatttc tggacaagcc cagcccagga acattgaaag gaaaactcag 1800
acttgtacaa gacaccatgt acaatgatta aagaattccc tagtggaatg acatccatgg 1860
ttcacaagga acatctccgg tggacttgcc aggagtgtga cgagatgacg atgcttttgg 1920
tttaggtgca gggttgcaaa gaaatcaagg aaaaaaaata tgacaataaa taaagcttta 1980
gttcacaagg gaaaaaaaaa aaaaaaaaa 2009

<210> 186
<211> 5220
<212> DNA
<213> Mus musculus

<400> 186
cggaactgct tcgactgcaa agcttcaagc gcagcctggg agcggcctgg tggccctatc 60
ccggcagctc cacacagcag aacgccctgg gtccctgaaa ctcgaaaccc gggctcagaa 120
ccagcggaaa ccaaagcgaa atccttgaac ttctctgaac aattgcttcc gggcgtttgc 180
tgagagccgg gggacctgac cggagcccag gccgcgtatg gcgcgcccct gatgtcacac 240
ggacgccagc gaggccagcg ctccggctgc agcatggacc gcgcggggcg cctgggtgcg 300

ggcctgcggg gactctgcgt ggctgcactc gtgctcgtgt gcgccggaca cgggggccgc 360
cgcgaggatg ggggaccagc ttgctacgga ggattcgacc tctacttcat cctggacaag 420
tcaggaagtg tgctgcacca ctggaatgaa atctactact tcgtggagca gttggctcat 480
agattcatca gcccacagct aaggatgtcc ttcattgtct tctctactcg agggacaact 540
ttaatgaaac taactgagga cagggaacag atccgacaag gcctagaaga gctccagaaa 600
gttctgccag gaggagacac ttacatgcac gaaggattcg agagggccag tgagcagatt 660
tactatgaga acagtcaagg atacaggacg gcgagcgtca tcatcgcgtt gacggatggg 720
gagctgcacg aggacctctt cttctactca gagagggagg ctaaccgatc ccgagacctt 780
ggtgcgattg tttactgcgt tggcgtgaag gatttcaatg aaactcagtt ggctcggatt 840
gcagacagta aggaccacgt gtttcctgtg aacgacggct tccaggctct ccaaggcatt 900
atccactcaa ttttaaagaa atcctgcatc gaaattctgg cggctgaacc atccaccatc 960
tgcgcgggag agtcctttca agtggtcgta agaggaaatg gcttccgaca tgcccgcaat 1020
gtggacaggg tcctctgcag cttcaaaatc aatgactcag tcacgctcaa tgagaagccc 1080
tttgctgtgg aagacactta tttgctgtgc ccagcaccaa tcttgaaaga agttggcatg 1140
aaagctgcac tgcaggtcag catgaacgac ggcctgtcct tcatctccag ttctgtcatc 1200
atcaccacca cacactgttc agacggctcc atcctggcga ttgctctgct ggtcctcttc 1260
ctgctgctgg ccctggcgct gctctggtgg ttctggcccc tctgctgcac agtgatcatc 1320
aaggaggtcc ctccaccccc tgttgaggag agtgaggaag aagacgatga tggtttgcca 1380
aagaagaaat ggcccacagt agatgcctct tattatggtg gacgcggtgt gggaggcatt 1440
aaaagaatgg aggtccgctg gggagaaaag ggctccacag aagaaggggc gaagttagaa 1500
aaggcaaaga atgcacgagt caagatgcca gagcaagaat atgagttccc agaaccccga 1560
aacctcaaca acaacatgcg ccggccttcc tcgcctcgga agtggtactc gcccatcaag 1620
ggaaaactcg atgccttgtg ggttctgctg agaaaaggat atgaccgagt gtctgtgatg 1680
aggccacagc caggagacac gggacgctgt atcaacttca ccagagtgaa gaacagtcag 1740
ccagccaagt atcccctgaa caacacctac caccccagct ccccacctcc cgctcctatc 1800
tacacacccc caccccctgc tccccactgc cctcccccag cccccagtgc ccccactcct 1860
cccattcctt ccccaccatc cactctcccc cctcctcctc aggccccacc ccctaacagg 1920
gcacctcccc cctcccgacc tcctccaagg ccttctgtct agaacccaaa gtccgagctc 1980
tgggctgcct gagcaactcc agcaggaggc ttctctgctg aaagaaagat ctgcccagcc 2040
tatgtggtga gtggcggctg atgtttgcac gatttaaaag caagtcgtga tgggcagaac 2100
aaaatgggca ttttgaactg cctgaagaca gacaatgaga caataacagt cacattatag 2160
cctgtgaccc ctcacctcta gaggaaggtt cccgagatgg ccacattgcc acagtgctct 2220
cagccagatt atgtcccatg aagaccagga agaaagtgac ttccaagaat ggaatgcagc 2280
attggataag aaacacctgg ctgagattct gacctcactg atttgactct tgattcttgg 2340
actgggagcc aggccatctc caccctggt accacccagc aactctgaaa atgtgcagtg 2400
tccctagtat gcatcgaata ggtatccaac tgggatctgc aggttgcctt ataaagagca 2460
tatgctctat tctctttccc gaacttcctg gtttcccagt gatgagggaa ggggaaaggt 2520
gttgccatgc ttagaagtta gaggacgtca gtgctcagca ctgatggaga agcgttgatg 2580
ggagtgtcca gctcttacat ctagaaatgg ctggcttcag caggcacagt tcctaaacca 2640
acaagccttg tcattgtcaa aggcaaccta ctaatgattc accttaaaca tcaaggttga 2700
ctgtggcata ggtcagagct gatcacacag aaccttcccc atgaaatcgc aaggttcctc 2760
atcttcaaat acccaggacc ccagagattt ctaaatccag ctaagagaca gtagtcctga 2820
cttggcaaga aaaccattcc cagttgtttt actctgaaac aggccgttgt atgtatggta 2880
tatctctcct tggcctttca acctgctcac aagtattacc agttatgaag caaggagaaa 2940
tacatccagt gtgtaataga aaagctctgc ccacaatccc catgtcactc ctctacatta 3000
ttctgaagct gcttggtcag tgagcccttt aacctcatgt agactctgga cactgtcacc 3060
caatcatgaa aacagaggtc attgtcaaag gcagtgtata gcctgtacaa aaatgatgct 3120
tccttcctca gtttccacag gccccaaaat tcctgtctta ggctcctaaa cctctaaact 3180
ttttcctgga acaaaagata taaaacgggc ataagttttt atgttttggg ctgtgatctc 3240
caaagatcct tcaagaactc aagttagcct cattcttcca gcttgtttag aacagaggca 3300
tccaggtgtc atgcactcca tagacaccaa tccttgttcc caaggcagac attattaatc 3360
aatctcagca ctagttctca atttaatcca attatatttt tccacagtac ttcacatctc 3420
ttatgacctg ttggtcatca gttagaattg agagagataa acactgtttg taatccctac 3480
cttagaaaga aaagcagagg agaatggggg aaccaccagc ataaaagtta ttatctgggg 3540
aaaatcgacc tgaaagaacg cccaagtcca agacctatgg tgctgacacc aaagtaacac 3600
tttcccaagt gtaccccaga ccccactctt ctccctgtgg ccaccactcc ctgcttttca 3660
ggagttgtga aaaagatctc cttcaccctt actgtgcccc catattagaa caaggcttgt 3720
ttagtgtagt ccttgttaaa caggtgccag aatgtctcag ccacctgaga tgacattgct 3780
gggccccaga aaaccattcc aaggagaatg ggctccccag gctcagagca tgcaactatg 3840
agcccatggc aactgttttg actgctggca gtacaaaacg ggccacccca cattacagct 3900
gcaggatttg tgcagccata agaaagtatg aaccaagatg ctggtgttgc tgttcaacaa 3960

gcatgggctt cggggaaggc agcagactcc gagagcaggc cttgtgcagt gtcccaaggg 4020
gctgtggtga agtgtctgag gaaaaatgaa tgctgataca tggtgattct gagaagaatt 4080
tgcaaggttt gaccttagaa tttatggaat gtcttccctg gtcattcaga attatggcta 4140
gaagtttcta gaaaccgtca aggttaatac ctttcagagt aggtgattac aggcaggaag 4200
agctttgatg tggtttacaa agcccatcag ttctgtgtca ttccctgtaa gcaacaggag 4260
atggtggttg tgattagcaa actgcatgtg ttatttgttt gactccttgt tattgtcctt 4320
acggaggatt ttttttatat aagccaaatt ttgttgtata tattcatatt ccacgtgaca 4380
gatggaagca cgtcctatca gtgtgaataa aaagaacagt tgtagtaaat tattaaagcc 4440
agtgatttca tggcaggtta ccctaccaag ctgtgcttgt tgatctccca tgaccatact 4500
gcttttacaa tgtacaaata gttcctaggt gacgagaccc tcctttacat aatgccgatg 4560
acagccttgc tgggaactgc ggtccttctg ctgtgacagc cagctcgaaa acaggtcctg 4620
cctggagctt gccacacact ttagggagac ataagagctg tctttcccca gcgtcaggga 4680
caaagctacc ataaagaagt ggaaaagtct tggctctcca gcctgggaca gaggtctctc 4740
tggaacccca aggaagagca gaaatgatcc ttgcctgcca ctgcacacaa tgtgatggtg 4800
gaaaatccat caaggaataa ttgtgagata atgaccgaca gttcaggcgc aaagggaatt 4860
catgctgtgt aaagtgggtg gaattcgttt gcaagctatg caaagcctga tcttactcac 4920
caggaggatg gaaagggttt ttttagttat ctgagctcag ctgagttatc acgcttggag 4980
aaccgattta aaggaattag aatatgattt ctgaatacac ataacattaa actcttctct 5040
ttttctatgg taatttagtt atggacgttc agcgtctctg agttattgtt ataaaagact 5100
tgtcatcacc gcactgtgct gtaggagact gggctgaacc tgtacaatgg tataccctgg 5160
aagttgcttt tttaaaaaaa aataataata aacacctaaa atcaaaaaaa aaaaaaaaaa 5220

<210> 187
<211> 564
<212> PRT
<213> Homo sapiens

<400> 187

```
Met Ala Thr Ala Glu Arg Arg Ala Leu Gly Ile Gly Phe Gln Trp Leu
 1               5                  10                  15
Ser Leu Ala Thr Leu Val Leu Ile Cys Ala Gly Gln Gly Gly Arg Arg
            20                  25                  30
Glu Asp Gly Gly Pro Ala Cys Tyr Gly Gly Phe Asp Leu Tyr Phe Ile
        35                  40                  45
Leu Asp Lys Ser Gly Ser Val Leu His His Trp Asn Glu Ile Tyr Tyr
    50                  55                  60
Phe Val Glu Gln Leu Ala His Lys Phe Ile Ser Pro Gln Leu Arg Met
65                  70                  75                  80
Ser Phe Ile Val Phe Ser Thr Arg Gly Thr Thr Leu Met Lys Leu Thr
                85                  90                  95
Glu Asp Arg Glu Gln Ile Arg Gln Gly Leu Glu Glu Leu Gln Lys Val
            100                 105                 110
Leu Pro Gly Gly Asp Thr Tyr Met His Glu Gly Phe Glu Arg Ala Ser
        115                 120                 125
Glu Gln Ile Tyr Tyr Glu Asn Arg Gln Gly Tyr Arg Thr Ala Ser Val
    130                 135                 140
Ile Ile Ala Leu Thr Asp Gly Glu Leu His Glu Asp Leu Phe Phe Tyr
145                 150                 155                 160
Ser Glu Arg Glu Ala Asn Arg Ser Arg Asp Leu Gly Ala Ile Val Tyr
                165                 170                 175
Cys Val Gly Val Lys Asp Phe Asn Glu Thr Gln Leu Ala Arg Ile Ala
            180                 185                 190
Asp Ser Lys Asp His Val Phe Pro Val Asn Asp Gly Phe Gln Ala Leu
        195                 200                 205
Gln Gly Ile Ile His Ser Ile Leu Lys Lys Ser Cys Ile Glu Ile Leu
    210                 215                 220
Ala Ala Glu Pro Ser Thr Ile Cys Ala Gly Glu Ser Phe Gln Val Val
225                 230                 235                 240
```

```
Val Arg Gly Asn Gly Phe Arg His Ala Arg Asn Val Asp Arg Val Leu
                245                 250                 255
Cys Ser Phe Lys Ile Asn Asp Ser Val Thr Leu Asn Glu Lys Pro Phe
            260                 265                 270
Ser Val Glu Asp Thr Tyr Leu Leu Cys Pro Ala Pro Ile Leu Lys Glu
        275                 280                 285
Val Gly Met Lys Ala Ala Leu Gln Val Ser Met Asn Asp Gly Leu Ser
    290                 295                 300
Phe Ile Ser Ser Ser Val Ile Ile Thr Thr Thr His Cys Ser Asp Gly
305                 310                 315                 320
Ser Ile Leu Ala Ile Ala Leu Leu Ile Leu Phe Leu Leu Leu Ala Leu
                325                 330                 335
Ala Leu Leu Trp Trp Phe Trp Pro Leu Cys Cys Thr Val Ile Ile Lys
            340                 345                 350
Glu Val Pro Pro Pro Pro Ala Glu Glu Ser Glu Glu Glu Asp Asp Asp
        355                 360                 365
Gly Leu Pro Lys Lys Lys Trp Pro Thr Val Asp Ala Ser Tyr Tyr Gly
    370                 375                 380
Gly Arg Gly Val Gly Gly Ile Lys Arg Met Glu Val Arg Trp Gly Glu
385                 390                 395                 400
Lys Gly Ser Thr Glu Glu Gly Ala Lys Leu Glu Lys Ala Lys Asn Ala
                405                 410                 415
Arg Val Lys Met Pro Glu Gln Glu Tyr Glu Phe Pro Glu Pro Arg Asn
            420                 425                 430
Leu Asn Asn Asn Met Arg Arg Pro Ser Ser Pro Arg Lys Trp Tyr Ser
        435                 440                 445
Pro Ile Lys Gly Lys Leu Asp Ala Leu Trp Val Leu Leu Arg Lys Gly
    450                 455                 460
Tyr Asp Arg Val Ser Val Met Arg Pro Gln Pro Gly Asp Thr Gly Arg
465                 470                 475                 480
Cys Ile Asn Phe Thr Arg Val Lys Asn Asn Gln Pro Ala Lys Tyr Pro
                485                 490                 495
Leu Asn Asn Ala Tyr His Thr Ser Ser Pro Pro Pro Ala Pro Ile Tyr
            500                 505                 510
Thr Pro Pro Pro Pro Ala Pro His Cys Pro Pro Pro Pro Pro Ser Ala
        515                 520                 525
Pro Thr Pro Pro Ile Pro Ser Pro Pro Ser Thr Leu Pro Pro Pro Pro
    530                 535                 540
Gln Ala Pro Pro Pro Asn Arg Ala Pro Pro Pro Ser Arg Pro Pro Pro
545                 550                 555                 560
Arg Pro Ser Val
```

<210> 188
<211> 1331
<212> PRT
<213> Homo sapiens

<400> 188

```
Met Arg Gly Ala Pro Ala Arg Leu Leu Leu Pro Leu Leu Pro Trp Leu
 1               5                  10                  15
Leu Leu Leu Leu Ala Pro Glu Ala Arg Gly Ala Pro Gly Cys Pro Leu
            20                  25                  30
Ser Ile Arg Ser Cys Lys Cys Ser Gly Glu Arg Pro Lys Gly Leu Ser
        35                  40                  45
Gly Gly Val Pro Gly Pro Ala Arg Arg Arg Val Val Cys Ser Gly Gly
    50                  55                  60
Asp Leu Pro Glu Pro Pro Glu Pro Gly Leu Leu Pro Asn Gly Thr Val
65                  70                  75                  80
Thr Leu Leu Leu Ser Asn Asn Lys Ile Thr Gly Leu Arg Asn Gly Ser
                85                  90                  95
```

```
Phe Leu Gly Leu Ser Leu Leu Glu Lys Leu Asp Leu Arg Asn Asn Ile
                100                 105                 110
Ile Ser Thr Val Gln Pro Gly Ala Phe Leu Gly Leu Gly Glu Leu Lys
            115                 120                 125
Arg Leu Asp Leu Ser Asn Asn Arg Ile Gly Cys Leu Thr Ser Glu Thr
        130                 135                 140
Phe Gln Gly Leu Pro Arg Leu Leu Arg Leu Asn Ile Ser Gly Asn Ile
145                 150                 155                 160
Phe Ser Ser Leu Gln Pro Gly Val Phe Asp Glu Leu Pro Ala Leu Lys
                165                 170                 175
Val Val Asp Leu Gly Thr Glu Phe Leu Thr Cys Asp Cys His Leu Arg
            180                 185                 190
Trp Leu Leu Pro Trp Ala Gln Asn Arg Ser Leu Gln Leu Ser Glu His
        195                 200                 205
Thr Leu Cys Ala Tyr Pro Ser Ala Leu His Ala Gln Ala Leu Gly Ser
    210                 215                 220
Leu Gln Glu Ala Gln Leu Cys Cys Glu Gly Ala Leu Glu Leu His Thr
225                 230                 235                 240
His His Leu Ile Pro Ser Leu Arg Gln Val Val Phe Gln Gly Asp Arg
                245                 250                 255
Leu Pro Phe Gln Cys Ser Ala Ser Tyr Leu Gly Asn Asp Thr Arg Ile
            260                 265                 270
Arg Trp Tyr His Asn Arg Ala Pro Val Glu Gly Asp Glu Gln Ala Gly
        275                 280                 285
Ile Leu Leu Ala Glu Ser Leu Ile His Asp Cys Thr Phe Ile Thr Ser
    290                 295                 300
Glu Leu Thr Leu Ser His Ile Gly Val Trp Ala Ser Gly Glu Trp Glu
305                 310                 315                 320
Cys Thr Val Ser Met Ala Gln Gly Asn Ala Ser Lys Lys Val Glu Ile
                325                 330                 335
Val Val Leu Glu Thr Ser Ala Ser Tyr Cys Pro Ala Glu Arg Val Ala
            340                 345                 350
Asn Asn Arg Gly Asp Phe Arg Trp Pro Arg Thr Leu Ala Gly Ile Thr
        355                 360                 365
Ala Tyr Gln Ser Cys Leu Gln Tyr Pro Phe Thr Ser Val Pro Leu Gly
    370                 375                 380
Gly Gly Ala Pro Gly Thr Arg Ala Ser Arg Arg Cys Asp Arg Ala Gly
385                 390                 395                 400
Arg Trp Glu Pro Gly Asp Tyr Ser His Cys Leu Tyr Thr Asn Asp Ile
                405                 410                 415
Thr Arg Val Leu Tyr Thr Phe Val Leu Met Pro Ile Asn Ala Ser Asn
            420                 425                 430
Ala Leu Thr Leu Ala His Gln Leu Arg Val Tyr Thr Ala Glu Ala Ala
        435                 440                 445
Ser Phe Ser Asp Met Met Asp Val Val Tyr Val Ala Gln Met Ile Gln
    450                 455                 460
Lys Phe Leu Gly Tyr Val Asp Gln Ile Lys Glu Leu Val Glu Val Met
465                 470                 475                 480
Val Asp Met Ala Ser Asn Leu Met Leu Val Asp Glu His Leu Leu Trp
                485                 490                 495
Leu Ala Gln Arg Glu Asp Lys Ala Cys Ser Arg Ile Val Gly Ala Leu
            500                 505                 510
Glu Arg Ile Gly Gly Ala Ala Leu Ser Pro His Ala Gln His Ile Ser
        515                 520                 525
Val Asn Ala Arg Asn Val Ala Leu Glu Ala Tyr Leu Ile Lys Pro His
    530                 535                 540
Ser Tyr Val Gly Leu Thr Cys Thr Ala Phe Gln Arg Arg Glu Gly Gly
545                 550                 555                 560
Val Pro Gly Thr Arg Pro Gly Ser Pro Gly Gln Asn Pro Pro Pro Glu
                565                 570                 575
Pro Glu Pro Pro Ala Asp Gln Gln Leu Arg Phe Arg Cys Thr Thr Gly
```

```
                580                 585                 590
Arg Pro Asn Val Ser Leu Ser Ser Phe His Ile Lys Asn Ser Val Ala
        595                 600                 605
Leu Ala Ser Ile Gln Leu Pro Pro Ser Leu Phe Ser Ser Leu Pro Ala
    610                 615                 620
Ala Leu Ala Pro Pro Val Pro Pro Asp Cys Thr Leu Gln Leu Leu Val
625                 630                 635                 640
Phe Arg Asn Gly Arg Leu Phe His Ser His Ser Asn Thr Ser Arg Pro
                645                 650                 655
Gly Ala Ala Gly Pro Gly Lys Arg Arg Gly Val Ala Thr Pro Val Ile
            660                 665                 670
Phe Ala Gly Thr Ser Gly Cys Gly Val Gly Asn Leu Thr Glu Pro Val
        675                 680                 685
Ala Val Ser Leu Arg His Trp Ala Glu Gly Ala Glu Pro Val Ala Ala
    690                 695                 700
Trp Trp Ser Gln Glu Gly Pro Gly Glu Ala Gly Gly Trp Thr Ser Glu
705                 710                 715                 720
Gly Cys Gln Leu Arg Ser Ser Gln Pro Asn Val Ser Ala Leu His Cys
                725                 730                 735
Gln His Leu Gly Asn Val Ala Val Leu Met Glu Leu Ser Ala Phe Pro
            740                 745                 750
Arg Glu Val Gly Gly Ala Gly Ala Gly Leu His Pro Val Val Tyr Pro
        755                 760                 765
Cys Thr Ala Leu Leu Leu Leu Cys Leu Phe Ala Thr Ile Ile Thr Tyr
    770                 775                 780
Ile Leu Asn His Ser Ser Ile Arg Val Ser Arg Lys Gly Trp His Met
785                 790                 795                 800
Leu Leu Asn Leu Cys Phe His Ile Ala Met Thr Ser Ala Val Phe Ala
                805                 810                 815
Gly Gly Ile Thr Leu Thr Asn Tyr Gln Met Val Cys Gln Ala Val Gly
            820                 825                 830
Ile Thr Leu His Tyr Ser Ser Leu Ser Thr Leu Leu Trp Met Gly Val
        835                 840                 845
Lys Ala Arg Val Leu His Lys Glu Leu Thr Trp Arg Ala Pro Pro Pro
    850                 855                 860
Gln Glu Gly Asp Pro Ala Leu Pro Thr Pro Ser Pro Met Leu Arg Phe
865                 870                 875                 880
Tyr Leu Ile Ala Gly Gly Ile Pro Leu Ile Ile Cys Gly Ile Thr Ala
                885                 890                 895
Ala Val Asn Ile His Asn Tyr Arg Asp His Ser Pro Tyr Cys Trp Leu
            900                 905                 910
Val Trp Arg Pro Ser Leu Gly Ala Phe Tyr Ile Pro Val Ala Leu Ile
        915                 920                 925
Leu Leu Ile Thr Trp Ile Tyr Phe Leu Cys Ala Gly Leu Arg Leu Arg
    930                 935                 940
Gly Pro Leu Ala Gln Asn Pro Lys Ala Gly Asn Ser Arg Ala Ser Leu
945                 950                 955                 960
Glu Ala Gly Glu Glu Leu Arg Gly Ser Thr Arg Leu Arg Gly Ser Gly
                965                 970                 975
Pro Leu Leu Ser Asp Ser Gly Ser Leu Leu Ala Thr Gly Ser Ala Arg
            980                 985                 990
Val Gly Thr Pro Gly Pro Pro Glu Asp Gly Asp Ser Leu Tyr Ser Pro
        995                 1000                1005
Gly Val Gln Leu Gly Ala Leu Val Thr Thr His Phe Leu Tyr Leu Ala
    1010                1015                1020
Met Trp Ala Cys Gly Ala Leu Ala Val Ser Gln Arg Trp Leu Pro Arg
1025                1030                1035                1040
Val Val Cys Ser Cys Leu Tyr Gly Val Ala Ala Ser Ala Leu Gly Leu
                1045                1050                1055
Phe Val Phe Thr His His Cys Ala Arg Arg Arg Asp Val Arg Ala Ser
            1060                1065                1070
```

```
Trp Arg Ala Cys Cys Pro Pro Ala Ser Pro Ala Ala Pro His Ala Pro
        1075                1080                1085
Pro Arg Ala Leu Pro Ala Ala Ala Glu Asp Gly Ser Pro Val Phe Gly
    1090                1095                1100
Glu Gly Pro Pro Ser Leu Lys Ser Ser Pro Ser Gly Ser Ser Gly His
1105                1110                1115                1120
Pro Leu Ala Leu Gly Pro Cys Lys Leu Thr Asn Leu Gln Leu Ala Gln
                1125                1130                1135
Ser Gln Val Cys Glu Ala Gly Ala Ala Ala Gly Gly Glu Gly Glu Pro
            1140                1145                1150
Glu Pro Ala Gly Thr Arg Gly Asn Leu Ala His Arg His Pro Asn Asn
        1155                1160                1165
Val His His Gly Arg Arg Ala His Lys Ser Arg Ala Lys Gly His Arg
    1170                1175                1180
Ala Gly Glu Ala Cys Gly Lys Asn Arg Leu Lys Ala Leu Arg Gly Gly
1185                1190                1195                1200
Ala Ala Gly Ala Leu Glu Leu Leu Ser Ser Glu Ser Gly Ser Leu His
                1205                1210                1215
Asn Ser Pro Thr Asp Ser Tyr Leu Gly Ser Ser Arg Asn Ser Pro Gly
            1220                1225                1230
Ala Gly Leu Gln Leu Glu Gly Glu Pro Met Leu Thr Pro Ser Glu Gly
        1235                1240                1245
Ser Asp Thr Ser Ala Ala Pro Leu Ser Glu Ala Gly Arg Ala Gly Gln
    1250                1255                1260
Arg Arg Ser Ala Ser Arg Asp Ser Leu Lys Gly Gly Gly Ala Leu Glu
1265                1270                1275                1280
Lys Glu Ser His Arg Arg Ser Tyr Pro Leu Asn Ala Ala Ser Leu Asn
                1285                1290                1295
Gly Ala Pro Lys Gly Gly Lys Tyr Asp Asp Val Thr Leu Met Gly Ala
            1300                1305                1310
Glu Val Ala Ser Gly Gly Cys Met Lys Thr Gly Leu Trp Lys Ser Glu
        1315                1320                1325
Thr Thr Val
    1330
```

<210> 189
<211> 529
<212> PRT
<213> Homo sapiens

<400> 189

```
Met Ala Arg Phe Pro Lys Ala Asp Leu Ala Ala Ala Gly Val Met Leu
 1               5                  10                  15
Leu Cys His Phe Phe Thr Asp Gln Phe Gln Phe Ala Asp Gly Lys Pro
            20                  25                  30
Gly Asp Gln Ile Leu Asp Trp Gln Tyr Gly Val Thr Gln Ala Phe Pro
        35                  40                  45
His Thr Glu Glu Glu Val Glu Val Asp Ser His Ala Tyr Ser His Arg
    50                  55                  60
Trp Lys Arg Asn Leu Asp Phe Leu Lys Ala Val Asp Thr Asn Arg Ala
65                  70                  75                  80
Ser Val Gly Gln Asp Ser Pro Glu Pro Arg Ser Phe Thr Asp Leu Leu
                85                  90                  95
Leu Asp Asp Gly Gln Asp Asn Asn Thr Gln Ile Glu Glu Asp Thr Asp
            100                 105                 110
His Asn Tyr Tyr Ile Ser Arg Ile Tyr Gly Pro Ser Asp Ser Ala Ser
        115                 120                 125
Arg Asp Leu Trp Val Asn Ile Asp Gln Met Glu Lys Asp Lys Val Lys
    130                 135                 140
Ile His Gly Ile Leu Ser Asn Thr His Arg Gln Ala Ala Arg Val Asn
145                 150                 155                 160
```

```
Leu Ser Phe Asp Phe Pro Phe Tyr Gly His Phe Leu Arg Glu Ile Thr
                165                 170                 175
Val Ala Thr Gly Gly Phe Ile Tyr Thr Gly Glu Val Val His Arg Met
            180                 185                 190
Leu Thr Ala Thr Gln Tyr Ile Ala Pro Leu Met Ala Asn Phe Asp Pro
        195                 200                 205
Ser Val Ser Arg Asn Ser Thr Val Arg Tyr Phe Asp Asn Gly Thr Ala
    210                 215                 220
Leu Val Val Gln Trp Asp His Val His Leu Gln Asp Asn Tyr Asn Leu
225                 230                 235                 240
Gly Ser Phe Thr Phe Gln Ala Thr Leu Leu Met Asp Gly Arg Ile Ile
                245                 250                 255
Phe Gly Tyr Lys Glu Ile Pro Val Leu Val Thr Gln Ile Ser Ser Thr
            260                 265                 270
Asn His Pro Val Lys Val Gly Leu Ser Asp Ala Phe Val Val Val His
        275                 280                 285
Arg Ile Gln Gln Ile Pro Asn Val Arg Arg Arg Thr Ile Tyr Glu Tyr
    290                 295                 300
His Arg Val Glu Leu Gln Met Ser Lys Ile Thr Asn Ile Ser Ala Val
305                 310                 315                 320
Glu Met Thr Pro Leu Pro Thr Cys Leu Gln Phe Asn Arg Cys Gly Pro
                325                 330                 335
Cys Val Ser Ser Gln Ile Gly Phe Asn Cys Ser Trp Cys Ser Lys Leu
            340                 345                 350
Gln Arg Cys Ser Ser Gly Phe Asp Arg His Arg Gln Asp Trp Val Asp
        355                 360                 365
Ser Gly Cys Pro Glu Glu Ser Lys Glu Lys Met Cys Glu Asn Thr Glu
    370                 375                 380
Pro Val Glu Thr Ser Ser Arg Thr Thr Thr Thr Ile Gly Ala Thr Thr
385                 390                 395                 400
Thr Gln Phe Arg Val Leu Thr Thr Thr Arg Arg Ala Val Thr Ser Gln
                405                 410                 415
Phe Pro Thr Ser Leu Pro Thr Glu Asp Asp Thr Lys Ile Ala Leu His
            420                 425                 430
Leu Lys Asp Asn Gly Ala Ser Thr Asp Asp Ser Ala Ala Glu Lys Lys
        435                 440                 445
Gly Gly Thr Leu His Ala Gly Leu Ile Val Gly Ile Leu Ile Leu Val
    450                 455                 460
Leu Ile Val Ala Thr Ala Ile Leu Val Thr Val Tyr Met Tyr His His
465                 470                 475                 480
Pro Thr Ser Ala Ala Ser Ile Phe Phe Ile Glu Arg Arg Pro Ser Arg
                485                 490                 495
Trp Pro Ala Met Lys Phe Arg Arg Gly Ser Gly His Pro Ala Tyr Ala
            500                 505                 510
Glu Val Glu Pro Val Gly Glu Lys Glu Gly Phe Ile Val Ser Glu Gln
        515                 520                 525
Cys
```

<210> 190
<211> 765
<212> PRT
<213> Mus musculus

<400> 190

```
Met Leu Leu Arg Leu Leu Leu Ala Trp Val Ala Ala Val Pro Ala Leu
 1               5                  10                  15
Gly Gln Val Pro Trp Thr Pro Glu Pro Arg Ala Ala Cys Gly Pro Ser
            20                  25                  30
Ser Cys Tyr Ala Leu Phe Pro Arg Arg Arg Thr Phe Leu Glu Ala Trp
        35                  40                  45
```

```
Arg Ala Cys Arg Glu Leu Gly Gly Asn Leu Ala Thr Pro Arg Thr Pro
    50                  55                  60
Glu Glu Ala Gln Arg Val Asp Ser Leu Val Gly Val Gly Pro Ala Asn
65                  70                  75                  80
Gly Leu Leu Trp Ile Gly Leu Gln Arg Gln Ala Arg Gln Cys Gln Pro
                85                  90                  95
Gln Arg Pro Leu Arg Gly Phe Ile Trp Thr Thr Gly Asp Gln Asp Thr
            100                 105                 110
Ala Phe Thr Asn Trp Ala Gln Pro Ala Thr Glu Gly Pro Cys Pro Ala
        115                 120                 125
Gln Arg Cys Ala Ala Leu Glu Ala Ser Gly Glu His Arg Trp Leu Glu
    130                 135                 140
Gly Ser Cys Thr Leu Ala Val Asp Gly Tyr Leu Cys Gln Phe Gly Phe
145                 150                 155                 160
Glu Gly Ala Cys Pro Ala Leu Pro Leu Glu Val Gly Gln Ala Gly Pro
                165                 170                 175
Ala Val Tyr Thr Thr Pro Phe Asn Leu Val Ser Ser Glu Phe Glu Trp
            180                 185                 190
Leu Pro Phe Gly Ser Val Ala Ala Val Gln Cys Gln Ala Gly Arg Gly
        195                 200                 205
Ala Ser Leu Leu Cys Val Lys Gln Pro Ser Gly Gly Val Gly Trp Ser
    210                 215                 220
Gln Thr Gly Pro Leu Cys Pro Gly Thr Gly Cys Gly Pro Asp Asn Gly
225                 230                 235                 240
Gly Cys Glu His Glu Cys Val Glu Glu Val Asp Gly Ala Val Ser Cys
                245                 250                 255
Arg Cys Ser Glu Gly Phe Arg Leu Ala Ala Asp Gly His Ser Cys Glu
            260                 265                 270
Asp Pro Cys Ala Gln Ala Pro Cys Glu Gln Gln Cys Glu Pro Gly Gly
        275                 280                 285
Pro Gln Gly Tyr Ser Cys His Cys Arg Leu Gly Phe Arg Pro Ala Glu
    290                 295                 300
Asp Asp Pro His Arg Cys Val Asp Thr Asp Glu Cys Gln Ile Ala Gly
305                 310                 315                 320
Val Cys Gln Gln Met Cys Val Asn Tyr Val Gly Gly Phe Glu Cys Tyr
                325                 330                 335
Cys Ser Glu Gly His Glu Leu Glu Ala Asp Gly Ile Ser Cys Ser Pro
            340                 345                 350
Ala Gly Ala Met Gly Ala Gln Ala Ser Gln Asp Leu Arg Asp Glu Leu
        355                 360                 365
Leu Asp Asp Gly Glu Glu Gly Glu Asp Glu Glu Glu Pro Trp Glu Asp
    370                 375                 380
Phe Asp Gly Thr Trp Thr Glu Glu Gln Gly Ile Leu Trp Leu Ala Pro
385                 390                 395                 400
Thr His Pro Pro Asp Phe Gly Leu Pro Tyr Arg Pro Asn Phe Pro Gln
                405                 410                 415
Asp Gly Glu Pro Gln Arg Leu His Leu Glu Pro Thr Trp Pro Pro Pro
            420                 425                 430
Leu Ser Ala Pro Arg Gly Pro Tyr His Ser Ser Val Val Ser Ala Thr
        435                 440                 445
Arg Pro Met Val Ile Ser Ala Thr Arg Pro Thr Leu Pro Ser Ala His
    450                 455                 460
Lys Thr Ser Val Ile Ser Ala Thr Arg Pro Pro Leu Ser Pro Val His
465                 470                 475                 480
Pro Pro Ala Met Ala Pro Ala Thr Pro Pro Ala Val Phe Ser Glu His
                485                 490                 495
Gln Ile Pro Lys Ile Lys Ala Asn Tyr Pro Asp Leu Pro Phe Gly His
            500                 505                 510
Lys Pro Gly Ile Thr Ser Ala Thr His Pro Ala Arg Ser Pro Pro Tyr
        515                 520                 525
Gln Pro Pro Ile Ile Ser Thr Asn Tyr Pro Gln Val Phe Pro Pro His
```

```
    530                 535                 540
Gln Ala Pro Met Ser Pro Asp Thr His Thr Ile Thr Tyr Leu Pro Pro
545                 550                 555                 560
Val Pro Pro His Leu Asp Pro Gly Asp Thr Thr Ser Lys Ala His Gln
                565                 570                 575
His Pro Leu Leu Pro Asp Ala Pro Gly Ile Arg Thr Gln Ala Pro Gln
            580                 585                 590
Leu Ser Val Ser Ala Leu Gln Pro Pro Leu Pro Thr Asn Ser Arg Ser
        595                 600                 605
Ser Val His Glu Thr Pro Val Pro Ala Ala Asn Gln Pro Pro Ala Phe
    610                 615                 620
Pro Ser Ser Pro Leu Pro Pro Gln Arg Pro Thr Asn Gln Thr Ser Ser
625                 630                 635                 640
Ile Ser Pro Thr His Ser Tyr Ser Arg Ala Pro Leu Val Pro Arg Glu
                645                 650                 655
Gly Val Pro Ser Pro Lys Ser Val Pro Gln Leu Pro Ser Val Pro Ser
            660                 665                 670
Thr Ala Ala Pro Thr Ala Leu Ala Glu Ser Gly Leu Ala Gly Gln Ser
        675                 680                 685
Gln Arg Asp Asp Arg Trp Leu Leu Val Ala Leu Leu Val Pro Thr Cys
    690                 695                 700
Val Phe Leu Val Val Leu Leu Ala Leu Gly Ile Val Tyr Cys Thr Arg
705                 710                 715                 720
Cys Gly Ser His Ala Pro Asn Lys Arg Ile Thr Asp Cys Tyr Arg Trp
                725                 730                 735
Val Thr His Ala Gly Asn Lys Ser Ser Thr Glu Pro Met Pro Pro Arg
            740                 745                 750
Gly Ser Leu Thr Gly Val Gln Thr Cys Arg Thr Ser Val
        755                 760                 765

      <210> 191
      <211> 1329
      <212> PRT
      <213> Mus musculus

      <400> 191
Met Pro Val Pro Pro Ala Arg Leu Leu Leu Leu Pro Leu Leu Pro Cys
 1               5                  10                  15
Leu Leu Leu Leu Ala Pro Gly Thr Arg Gly Ala Pro Gly Cys Pro Val
            20                  25                  30
Pro Ile Arg Gly Cys Lys Cys Ser Gly Glu Arg Pro Lys Gly Leu Ser
        35                  40                  45
Gly Gly Ala His Asn Pro Ala Arg Arg Arg Val Val Cys Gly Gly Gly
    50                  55                  60
Asp Leu Pro Glu Pro Pro Asp Pro Gly Leu Leu Pro Asn Gly Thr Ile
65                  70                  75                  80
Thr Leu Leu Leu Ser Asn Asn Lys Ile Thr Gly Leu Arg Asn Gly Ser
                85                  90                  95
Phe Leu Gly Leu Ser Leu Leu Glu Lys Leu Asp Leu Arg Ser Asn Val
            100                 105                 110
Ile Ser Thr Val Gln Pro Gly Ala Phe Leu Gly Leu Gly Glu Leu Lys
        115                 120                 125
Arg Leu Asp Leu Ser Asn Asn Arg Ile Gly Cys Leu Thr Ser Glu Thr
    130                 135                 140
Phe Gln Gly Leu Pro Arg Leu Leu Arg Leu Asn Ile Ser Gly Asn Ile
145                 150                 155                 160
Tyr Ser Ser Leu Gln Pro Gly Val Phe Asp Glu Leu Pro Ala Leu Lys
                165                 170                 175
Ile Val Asp Phe Gly Thr Glu Phe Leu Thr Cys Asp Cys Arg Leu Arg
            180                 185                 190
Trp Leu Leu Pro Trp Ala Arg Asn His Ser Leu Gln Leu Ser Glu Arg
```

```
        195                 200                 205
Thr Leu Cys Ala Tyr Pro Ser Ala Leu His Ala His Ala Leu Ser Ser
    210                 215                 220
Leu Gln Glu Ser Gln Leu Arg Cys Glu Gly Ala Leu Glu Leu His Thr
225                 230                 235                 240
His Tyr Leu Ile Pro Ser Leu Arg Gln Val Val Phe Gln Gly Asp Arg
                245                 250                 255
Leu Pro Phe Gln Cys Ser Ala Ser Tyr Leu Gly Asn Asp Thr Arg Ile
            260                 265                 270
His Trp Tyr His Asn Gly Ala Pro Met Glu Ser Asp Glu Gln Ala Gly
        275                 280                 285
Ile Val Leu Ala Glu Asn Leu Ile His Asp Cys Thr Phe Ile Thr Ser
    290                 295                 300
Glu Leu Thr Leu Ser His Ile Gly Val Trp Ala Ser Gly Glu Trp Glu
305                 310                 315                 320
Cys Ser Val Ser Thr Val Gln Gly Asn Thr Ser Lys Lys Val Glu Ile
                325                 330                 335
Val Val Leu Glu Thr Ser Ala Ser Tyr Cys Pro Ala Glu Arg Val Thr
            340                 345                 350
Asn Asn Arg Gly Asp Phe Arg Trp Pro Arg Thr Leu Ala Gly Ile Thr
        355                 360                 365
Ala Tyr Gln Ser Cys Leu Gln Tyr Pro Phe Thr Ser Val Pro Leu Ser
    370                 375                 380
Gly Gly Ala Pro Gly Thr Arg Ala Ser Arg Arg Cys Asp Arg Ala Gly
385                 390                 395                 400
Arg Trp Glu Pro Gly Asp Tyr Ser His Cys Leu Tyr Thr Asn Asp Ile
                405                 410                 415
Thr Arg Val Leu Tyr Thr Phe Val Leu Met Pro Ile Asn Ala Ser Asn
            420                 425                 430
Ala Leu Thr Leu Ala His Gln Leu Arg Val Tyr Thr Ala Glu Ala Ala
        435                 440                 445
Ser Phe Ser Asp Met Met Asp Val Val Tyr Val Ala Gln Met Ile Gln
    450                 455                 460
Lys Phe Leu Gly Tyr Val Asp Gln Ile Lys Glu Leu Val Glu Val Met
465                 470                 475                 480
Val Asp Met Ala Ser Asn Leu Met Leu Val Asp Glu His Leu Leu Trp
                485                 490                 495
Leu Ala Gln Arg Glu Asp Lys Ala Cys Ser Gly Ile Val Gly Ala Leu
            500                 505                 510
Glu Arg Ile Gly Gly Ala Ala Leu Ser Pro His Ala Gln His Ile Ser
        515                 520                 525
Val Asn Ser Arg Asn Val Ala Leu Glu Ala Tyr Leu Ile Lys Pro His
    530                 535                 540
Ser Tyr Val Gly Leu Thr Cys Thr Ala Phe Gln Arg Arg Glu Val Gly
545                 550                 555                 560
Val Ser Gly Ala Gln Pro Ser Ser Val Gly Gln Asp Ala Pro Val Glu
                565                 570                 575
Pro Glu Pro Leu Ala Asp Gln Gln Leu Arg Phe Arg Cys Thr Thr Gly
            580                 585                 590
Arg Pro Asn Ile Ser Leu Ser Ser Phe His Ile Lys Asn Ser Val Ala
        595                 600                 605
Leu Ala Ser Ile Gln Leu Pro Pro Ser Leu Phe Ser Thr Leu Pro Ala
    610                 615                 620
Ala Leu Ala Pro Pro Val Pro Pro Asp Cys Thr Leu Gln Leu Leu Val
625                 630                 635                 640
Phe Arg Asn Gly Arg Leu Phe Arg Ser His Gly Asn Asn Thr Ser Arg
                645                 650                 655
Pro Gly Ala Ala Gly Pro Gly Lys Arg Arg Gly Val Ala Thr Pro Val
            660                 665                 670
Ile Phe Ala Gly Thr Ser Gly Cys Gly Val Gly Asn Leu Thr Glu Pro
        675                 680                 685
```

Val Ala Val Ser Leu Arg His Trp Ala Glu Gly Ala Asp Pro Met Ala
690 695 700
Ala Trp Trp Asn Gln Asp Gly Pro Gly Gly Trp Ser Ser Glu Gly Cys
705 710 715 720
Arg Leu Arg Tyr Ser Gln Pro Asn Val Ser Ser Leu Tyr Cys Gln His
725 730 735
Leu Gly Asn Val Ala Val Leu Met Glu Leu Asn Ala Phe Pro Arg Glu
740 745 750
Ala Gly Gly Ser Gly Ala Gly Leu His Pro Val Val Tyr Pro Cys Thr
755 760 765
Ala Leu Leu Leu Leu Cys Leu Phe Ser Thr Ile Ile Thr Tyr Ile Leu
770 775 780
Asn His Ser Ser Ile His Val Ser Arg Lys Gly Trp His Met Leu Leu
785 790 795 800
Asn Leu Cys Phe His Met Ala Met Thr Ser Ala Val Phe Val Gly Gly
805 810 815
Val Thr Leu Thr Asn Tyr Gln Met Val Cys Gln Ala Val Gly Ile Thr
820 825 830
Leu His Tyr Ser Ser Leu Ser Ser Leu Leu Trp Met Gly Val Lys Ala
835 840 845
Arg Val Leu His Lys Glu Leu Ser Trp Arg Ala Pro Pro Leu Glu Glu
850 855 860
Gly Glu Ala Ala Pro Pro Gly Pro Arg Pro Met Leu Arg Phe Tyr Leu
865 870 875 880
Ile Ala Gly Gly Ile Pro Leu Ile Ile Cys Gly Ile Thr Ala Ala Val
885 890 895
Asn Ile His Asn Tyr Arg Asp His Ser Pro Tyr Cys Trp Leu Val Trp
900 905 910
Arg Pro Ser Leu Gly Ala Phe Tyr Ile Pro Val Ala Leu Ile Leu Pro
915 920 925
Ile Thr Trp Ile Tyr Phe Leu Cys Ala Gly Leu His Leu Arg Ser His
930 935 940
Val Ala Gln Asn Pro Lys Gln Gly Asn Arg Ile Ser Leu Glu Pro Gly
945 950 955 960
Glu Glu Leu Arg Gly Ser Thr Arg Leu Arg Ser Ser Gly Val Leu Leu
965 970 975
Asn Asp Ser Gly Ser Leu Leu Ala Thr Val Ser Ala Gly Val Gly Thr
980 985 990
Pro Ala Pro Pro Glu Asp Gly Asp Gly Val Tyr Ser Pro Gly Val Gln
995 1000 1005
Leu Gly Ala Leu Met Thr Thr His Phe Leu Tyr Leu Ala Met Trp Ala
1010 1015 1020
Cys Gly Ala Leu Ala Val Ser Gln Arg Trp Leu Pro Arg Val Val Cys
1025 1030 1035 1040
Ser Cys Leu Tyr Gly Val Ala Ala Ser Ala Leu Gly Leu Phe Val Phe
1045 1050 1055
Thr His His Cys Ala Arg Arg Arg Asp Val Arg Ala Ser Trp Arg Ala
1060 1065 1070
Cys Cys Pro Pro Ala Ser Pro Ser Ala Ser His Val Pro Ala Arg Ala
1075 1080 1085
Leu Pro Thr Ala Thr Glu Asp Gly Ser Pro Val Leu Gly Glu Gly Pro
1090 1095 1100
Ala Ser Leu Lys Ser Ser Pro Ser Gly Ser Ser Gly Arg Ala Pro Pro
1105 1110 1115 1120
Pro Pro Cys Lys Leu Thr Asn Leu Gln Val Ala Gln Ser Gln Val Cys
1125 1130 1135
Glu Ala Ser Val Ala Ala Arg Gly Asp Gly Glu Pro Glu Pro Thr Gly
1140 1145 1150
Ser Arg Gly Ser Leu Ala Pro Arg His His Asn Asn Leu His His Gly
1155 1160 1165
Arg Arg Val His Lys Ser Arg Ala Lys Gly His Arg Ala Gly Glu Thr

```
    1170                1175                1180
Gly Gly Lys Ser Arg Leu Lys Ala Leu Arg Ala Gly Thr Ser Pro Gly
1185                1190                1195                1200
Ala Pro Glu Leu Leu Ser Ser Glu Ser Gly Ser Leu His Asn Ser Pro
                1205                1210                1215
Ser Asp Ser Tyr Pro Gly Ser Ser Arg Asn Ser Pro Gly Asp Gly Leu
            1220                1225                1230
Pro Leu Glu Gly Glu Pro Met Leu Thr Pro Ser Glu Gly Ser Asp Thr
        1235                1240                1245
Ser Ala Ala Pro Ile Ala Glu Thr Gly Arg Pro Gly Gln Arg Arg Ser
    1250                1255                1260
Ala Ser Arg Asp Asn Leu Lys Gly Ser Gly Ser Ala Leu Glu Arg Glu
1265                1270                1275                1280
Ser Lys Arg Arg Ser Tyr Pro Leu Asn Thr Thr Ser Leu Asn Gly Ala
                1285                1290                1295
Pro Lys Gly Gly Lys Tyr Glu Asp Ala Ser Val Thr Gly Ala Glu Ala
            1300                1305                1310
Ile Ala Gly Gly Ser Met Lys Thr Gly Leu Trp Lys Ser Glu Thr Thr
        1315                1320                1325
Val
```

<210> 192
<211> 500
<212> PRT
<213> Mus musculus

<400> 192

```
Met Arg Ala Gln Leu Trp Leu Leu Gln Leu Leu Leu Leu Arg Gly Ala
 1               5                  10                  15
Ala Arg Ala Leu Ser Pro Ala Thr Pro Ala Gly His Asn Glu Gly Gln
            20                  25                  30
Asp Ser Ala Trp Thr Ala Lys Arg Thr Arg Gln Gly Trp Ser Arg Arg
        35                  40                  45
Pro Arg Glu Ser Pro Ala Gln Val Leu Lys Pro Gly Lys Thr Gln Leu
    50                  55                  60
Ser Gln Asp Leu Gly Gly Gly Ser Leu Ala Ile Asp Thr Leu Pro Asp
65                  70                  75                  80
Asn Arg Thr Arg Val Val Glu Asp Asn His Asn Tyr Tyr Val Ser Arg
                85                  90                  95
Val Tyr Gly Pro Gly Glu Lys Gln Ser Gln Asp Leu Trp Val Asp Leu
            100                 105                 110
Ala Val Ala Asn Arg Ser His Val Lys Ile His Arg Ile Leu Ser Ser
        115                 120                 125
Ser His Arg Gln Ala Ser Arg Val Val Leu Ser Phe Asp Phe Pro Phe
    130                 135                 140
Tyr Gly His Pro Leu Arg Gln Ile Thr Ile Ala Thr Gly Gly Phe Ile
145                 150                 155                 160
Phe Met Gly Asp Met Leu His Arg Met Leu Thr Ala Thr Gln Tyr Val
                165                 170                 175
Ala Pro Leu Met Ala Asn Phe Asn Pro Gly Tyr Ser Asp Asn Ser Thr
            180                 185                 190
Val Ala Tyr Phe Asp Asn Gly Thr Val Phe Val Val Gln Trp Asp His
        195                 200                 205
Val Tyr Leu Gln Asp Arg Glu Asp Arg Gly Ser Phe Thr Phe Gln Ala
    210                 215                 220
Ala Leu His Arg Asp Gly Arg Ile Val Phe Gly Tyr Lys Glu Ile Pro
225                 230                 235                 240
Met Ala Val Leu Asp Ile Ser Ser Ala Gln His Pro Val Lys Ala Gly
                245                 250                 255
Leu Ser Asp Ala Phe Met Ile Leu Asn Ser Ser Pro Glu Val Pro Glu
```

260 265 270
Ser Gln Arg Arg Thr Ile Phe Glu Tyr His Arg Val Glu Leu Asp Ser
275 280 285
Ser Lys Ile Thr Thr Thr Ser Ala Val Glu Phe Thr Pro Leu Pro Thr
290 295 300
Cys Leu Gln His Gln Ser Cys Asp Thr Cys Val Ser Ser Asn Leu Thr
305 310 315 320
Phe Asn Cys Ser Trp Cys His Val Leu Gln Arg Cys Ser Ser Gly Phe
325 330 335
Asp Arg Tyr Arg Gln Glu Trp Leu Thr Tyr Gly Cys Ala Gln Glu Ala
340 345 350
Glu Gly Lys Thr Cys Glu Asp Phe Gln Asp Asp Ser His Tyr Ser Ala
355 360 365
Ser Pro Asp Ser Ser Phe Ser Pro Phe Asn Gly Asp Ser Thr Thr Ser
370 375 380
Ser Ser Leu Phe Ile Asp Ser Leu Thr Thr Glu Asp Asp Thr Lys Leu
385 390 395 400
Asn Pro Tyr Ala Glu Gly Asp Gly Leu Pro Asp His Ser Ser Pro Lys
405 410 415
Ser Lys Gly Pro Pro Val His Leu Gly Thr Ile Val Gly Ile Val Leu
420 425 430
Ala Val Leu Leu Val Ala Ala Ile Ile Leu Ala Gly Ile Tyr Ile Ser
435 440 445
Gly His Pro Asn Ser Asn Ala Ala Leu Phe Phe Ile Glu Arg Arg Pro
450 455 460
His His Trp Pro Ala Met Lys Phe His Asn His Pro Asn His Ser Thr
465 470 475 480
Tyr Thr Glu Val Glu Pro Ser Gly His Glu Lys Glu Gly Phe Val Glu
485 490 495
Ala Glu Gln Cys
500

<210> 193
<211> 530
<212> PRT
<213> Mus musculus

<400> 193
Met Ala Arg Phe Arg Arg Ala Asp Leu Ala Ala Ala Gly Val Met Leu
1 5 10 15
Leu Cys His Phe Leu Thr Asp Arg Phe His Phe Ala His Gly Glu Pro
20 25 30
Gly His His Thr Asn Asp Trp Ile Tyr Glu Val Thr Asn Ala Phe Pro
35 40 45
Trp Asn Glu Glu Gly Val Glu Val Asp Ser Gln Ala Tyr Asn His Arg
50 55 60
Trp Lys Arg Asn Val Asp Pro Phe Lys Ala Val Asp Thr Asn Arg Ala
65 70 75 80
Ser Met Gly Gln Ala Ser Pro Glu Ser Lys Gly Phe Thr Asp Leu Leu
85 90 95
Leu Asp Asp Gly Gln Asp Asn Asn Thr Gln Ile Glu Glu Asp Thr Asp
100 105 110
His Asn Tyr Tyr Ile Ser Arg Ile Tyr Gly Pro Ala Asp Ser Ala Ser
115 120 125
Arg Asp Leu Trp Val Asn Ile Asp Gln Met Glu Lys Asp Lys Val Lys
130 135 140
Ile His Gly Ile Leu Ser Asn Thr His Arg Gln Ala Ala Arg Val Asn
145 150 155 160
Leu Ser Phe Asp Phe Pro Phe Tyr Gly His Phe Leu Asn Glu Val Thr
165 170 175
Val Ala Thr Gly Gly Phe Ile Tyr Thr Gly Glu Val Val His Arg Met

```
            180                 185                 190
Leu Thr Ala Thr Gln Tyr Ile Ala Pro Leu Met Ala Asn Phe Asp Pro
        195                 200                 205
Ser Val Ser Arg Asn Ser Thr Val Arg Tyr Phe Asp Asn Gly Thr Ala
    210                 215                 220
Leu Val Val Gln Trp Asp His Val His Leu Gln Asp Asn Tyr Asn Leu
225                 230                 235                 240
Gly Ser Phe Thr Phe Gln Ala Thr Leu Leu Met Asp Gly Arg Ile Ile
                245                 250                 255
Phe Gly Tyr Lys Glu Ile Pro Val Leu Val Thr Gln Ile Ser Ser Thr
            260                 265                 270
Asn His Pro Val Lys Val Gly Leu Ser Asp Ala Phe Val Val Val His
        275                 280                 285
Arg Ile Gln Gln Ile Pro Asn Val Arg Arg Arg Thr Ile Tyr Glu Tyr
    290                 295                 300
His Arg Val Glu Leu Gln Met Ser Lys Ile Thr Asn Ile Ser Ala Val
305                 310                 315                 320
Glu Met Thr Pro Leu Pro Thr Cys Leu Gln Phe Asn Gly Cys Gly Pro
                325                 330                 335
Cys Val Ser Ser Gln Ile Gly Phe Asn Cys Ser Trp Cys Ser Lys Leu
            340                 345                 350
Gln Arg Cys Ser Ser Gly Phe Asp Arg His Arg Gln Asp Trp Val Asp
        355                 360                 365
Ser Gly Cys Pro Glu Glu Val Gln Ser Lys Glu Lys Met Cys Glu Lys
    370                 375                 380
Thr Glu Pro Gly Glu Thr Ser Gln Thr Thr Thr Thr Ser His Thr Thr
385                 390                 395                 400
Thr Met Gln Phe Arg Val Leu Thr Thr Thr Arg Arg Ala Val Thr Ser
                405                 410                 415
Gln Met Pro Thr Ser Leu Pro Thr Glu Asp Asp Thr Lys Ile Ala Leu
            420                 425                 430
His Leu Lys Asp Ser Gly Ala Ser Thr Asp Asp Ser Ala Ala Glu Lys
        435                 440                 445
Lys Gly Gly Thr Leu His Ala Gly Leu Ile Val Gly Ile Leu Ile Leu
    450                 455                 460
Val Leu Ile Ile Ala Ala Ala Ile Leu Val Thr Val Tyr Met Tyr His
465                 470                 475                 480
His Pro Thr Ser Ala Ala Ser Ile Phe Phe Ile Glu Arg Arg Pro Ser
                485                 490                 495
Arg Trp Pro Ala Met Lys Phe Arg Arg Gly Ser Gly His Pro Ala Tyr
            500                 505                 510
Ala Glu Val Glu Pro Val Gly Glu Lys Glu Gly Phe Ile Val Ser Glu
        515                 520                 525
Gln Cys
    530
```

<210> 194
<211> 562
<212> PRT
<213> Mus musculus

<400> 194

```
Met Asp Arg Ala Gly Arg Leu Gly Ala Gly Leu Arg Gly Leu Cys Val
 1               5                  10                  15
Ala Ala Leu Val Leu Val Cys Ala Gly His Gly Gly Arg Arg Glu Asp
            20                  25                  30
Gly Gly Pro Ala Cys Tyr Gly Gly Phe Asp Leu Tyr Phe Ile Leu Asp
        35                  40                  45
Lys Ser Gly Ser Val Leu His His Trp Asn Glu Ile Tyr Tyr Phe Val
    50                  55                  60
Glu Gln Leu Ala His Arg Phe Ile Ser Pro Gln Leu Arg Met Ser Phe
```

65 70 75 80
Ile Val Phe Ser Thr Arg Gly Thr Thr Leu Met Lys Leu Thr Glu Asp
85 90 95
Arg Glu Gln Ile Arg Gln Gly Leu Glu Glu Leu Gln Lys Val Leu Pro
100 105 110
Gly Gly Asp Thr Tyr Met His Glu Gly Phe Glu Arg Ala Ser Glu Gln
115 120 125
Ile Tyr Tyr Glu Asn Ser Gln Gly Tyr Arg Thr Ala Ser Val Ile Ile
130 135 140
Ala Leu Thr Asp Gly Glu Leu His Glu Asp Leu Phe Phe Tyr Ser Glu
145 150 155 160
Arg Glu Ala Asn Arg Ser Arg Asp Leu Gly Ala Ile Val Tyr Cys Val
165 170 175
Gly Val Lys Asp Phe Asn Glu Thr Gln Leu Ala Arg Ile Ala Asp Ser
180 185 190
Lys Asp His Val Phe Pro Val Asn Asp Gly Phe Gln Ala Leu Gln Gly
195 200 205
Ile Ile His Ser Ile Leu Lys Lys Ser Cys Ile Glu Ile Leu Ala Ala
210 215 220
Glu Pro Ser Thr Ile Cys Ala Gly Glu Ser Phe Gln Val Val Val Arg
225 230 235 240
Gly Asn Gly Phe Arg His Ala Arg Asn Val Asp Arg Val Leu Cys Ser
245 250 255
Phe Lys Ile Asn Asp Ser Val Thr Leu Asn Glu Lys Pro Phe Ala Val
260 265 270
Glu Asp Thr Tyr Leu Leu Cys Pro Ala Pro Ile Leu Lys Glu Val Gly
275 280 285
Met Lys Ala Ala Leu Gln Val Ser Met Asn Asp Gly Leu Ser Phe Ile
290 295 300
Ser Ser Ser Val Ile Ile Thr Thr Thr His Cys Ser Asp Gly Ser Ile
305 310 315 320
Leu Ala Ile Ala Leu Leu Val Leu Phe Leu Leu Leu Ala Leu Ala Leu
325 330 335
Leu Trp Trp Phe Trp Pro Leu Cys Cys Thr Val Ile Ile Lys Glu Val
340 345 350
Pro Pro Pro Pro Val Glu Glu Ser Glu Glu Glu Asp Asp Asp Gly Leu
355 360 365
Pro Lys Lys Lys Trp Pro Thr Val Asp Ala Ser Tyr Tyr Gly Gly Arg
370 375 380
Gly Val Gly Gly Ile Lys Arg Met Glu Val Arg Trp Gly Glu Lys Gly
385 390 395 400
Ser Thr Glu Glu Gly Ala Lys Leu Glu Lys Ala Lys Asn Ala Arg Val
405 410 415
Lys Met Pro Glu Gln Glu Tyr Glu Phe Pro Glu Pro Arg Asn Leu Asn
420 425 430
Asn Asn Met Arg Arg Pro Ser Ser Pro Arg Lys Trp Tyr Ser Pro Ile
435 440 445
Lys Gly Lys Leu Asp Ala Leu Trp Val Leu Leu Arg Lys Gly Tyr Asp
450 455 460
Arg Val Ser Val Met Arg Pro Gln Pro Gly Asp Thr Gly Arg Cys Ile
465 470 475 480
Asn Phe Thr Arg Val Lys Asn Ser Gln Pro Ala Lys Tyr Pro Leu Asn
485 490 495
Asn Thr Tyr His Pro Ser Ser Pro Pro Pro Ala Pro Ile Tyr Thr Pro
500 505 510
Pro Pro Pro Ala Pro His Cys Pro Pro Pro Ala Pro Ser Ala Pro Thr
515 520 525
Pro Pro Ile Pro Ser Pro Pro Ser Thr Leu Pro Pro Pro Pro Gln Ala
530 535 540
Pro Pro Pro Asn Arg Ala Pro Pro Pro Ser Arg Pro Pro Pro Arg Pro
545 550 555 560

Ser Val

<210> 195
<211> 2565
<212> DNA
<213> Homo sapiens

<400> 195
tcgcgatgct gctgcgcctg ttgctggcct gggcggccgc agggcccaca ctgggccagg 60
acccctgggc tgctgagccc cgtgccgcct gcggccccag cagctgctac gctctcttcc 120
cacggcgccg caccttcctg gaggcctggc gggcctgccg cgagctgggg ggcgacctgg 180
ccactcctcg gacccccgag gaggcccagc gtgtggacag cctggtgggt gcgggcccag 240
ccagccggct gctgtggatc gggctgcagc ggcaggcccg gcaatgccag ctgcagcgcc 300
cactgcgcgg cttcacgtgg accacagggg accaggacac ggctttcacc aactgggccc 360
agccagcctc tggaggcccc tgcccggccc agcgctgtgt ggccctggag gcaagtggcg 420
agcaccgctg gctggagggc tcgtgcacgc tggctgtcga cggctacctg tgccagtttg 480
gcttcgaggg cgcctgcccg gcgctgcaag atgaggcggg ccaggccggc ccagccgtgt 540
ataccacgcc cttccacctg gtctccacag agtttgagtg gctgcccttc ggctctgtgg 600
ccgctgtgca gtgccaggct ggcaggggag cctctctgct ctgcgtgaag cagcctgagg 660
gaggtgtggg ctggtcacgg gctgggcccc tgtgcctggg gactggctgc agccctgaca 720
acgggggctg cgaacacgaa tgtgtggagg aggtggatgg tcacgtgtcc tgccgctgca 780
ctgagggctt ccggctggca gcagacgggc gcagttgcga ggacccctgt gcccaggctc 840
cgtgcgagca gcagtgtgag cccggtgggc cacaaggcta cagctgccac tgtcgcctgg 900
gtttccggcc agcggaggat gatccgcacc gctgtgtgga cacagatgag tgccagattg 960
ccggtgtgtg ccagcagatg tgtgtcaact acgttggtgg cttcgagtgt tattgtagcg 1020
agggacatga gctggaggct gatggcatca gctgcagccc tgcaggggcc atgggtgccc 1080
aggcttccca ggacctcgga gatgagttgc tggatgacgg ggaggatgag gaagatgaag 1140
acgaggcctg gaaggccttc aacggtggct ggacggagat gcctgggatc ctgtggatgg 1200
agcctacgca gccgcctgac tttgccctgg cctatagacc gagcttccca gaggacagag 1260
agccacagat accctacccg gagcccacct ggccaccccc gctcagtgcc cccagggtcc 1320
cctaccactc ctcagtgctc tccgtcaccc ggcctgtggt ggtctctgcc acgcatccca 1380
cactgccttc tgcccaccag cctcctgtga tccctgccac acacccagct ttgtcccgtg 1440
accaccagat ccccgtgatc gcagccaact atccagatct gccttctgcc taccaacccg 1500
gtattctctc tgtctctcat tcagcacagc ctcctgccca ccagcccctt atgatctcaa 1560
ccaaatatcc ggagctcttc cctgcccacc agtcccccat gtttccagac acccgggtcg 1620
ctggcaccca gaccaccact catttgcctg gaatcccacc taaccatgcc cctctggtca 1680
ccaccctcgg tgcccagcta ccccctcaag ccccagatgc ccttgtcctc agaacccagg 1740
ccacccagct tcccattatc ccaactgccc agccctctct gaccaccacc tccaggtccc 1800
ctgtgtctcc tgcccatcaa atctctgtgc ctgctgccac ccagcccgca gccctcccca 1860
ccctcctgcc ctctcagagc cccactaacc agacctcacc catcagccct acacatcccc 1920
attccaaagc cccccaaatc ccaagggaag atggccccag tcccaagttg gccctgtggc 1980
tgccctcacc agctcccaca gcagccccaa cagcctgggg ggaggctggt cttgccgagc 2040
acagccagag ggatgaccgg tggctgctgg tggcactcct ggtgccaacg tgtgtctttt 2100
tggtggtcct gcttgcactg ggcatcgtgt actgcacccg ctgtggcccc catgcaccca 2160
acaagcgcat cactgactgc tatcgctggg tcatccatgc tgggagcaag agcccaacag 2220
aacccatgcc ccccaggggc agcctcacag gggtgcagac ctgcagaacc agcgtgtgat 2280
ggggtgcaga ccccctcat ggagtatggg gcgctggaca catggccggg gctgcaccag 2340
ggacccatgg gggctgccca gctggacaga tggcttcctg ctccccaggc ccagccaggg 2400
tcctctctca accactagac ttggctctca ggaactctgc ttcctggccc agcgctcgtg 2460
accaaggata caccaaagcc cttaagacct caggggggcgg gtgctggggt cttctccaat 2520
aaatggggtg tcaaccttaa aaaaaaaaaa aaaaaaaaaa aaaaa 2565

<210> 196
<211> 757
<212> PRT
<213> Homo sapiens

<400> 196
Met Leu Leu Arg Leu Leu Leu Ala Trp Ala Ala Ala Gly Pro Thr Leu
1 5 10 15

```
Gly Gln Asp Pro Trp Ala Ala Glu Pro Arg Ala Ala Cys Gly Pro Ser
            20                  25                  30
Ser Cys Tyr Ala Leu Phe Pro Arg Arg Arg Thr Phe Leu Glu Ala Trp
        35                  40                  45
Arg Ala Cys Arg Glu Leu Gly Gly Asp Leu Ala Thr Pro Arg Thr Pro
    50                  55                  60
Glu Glu Ala Gln Arg Val Asp Ser Leu Val Gly Ala Gly Pro Ala Ser
65                  70                  75                  80
Arg Leu Leu Trp Ile Gly Leu Gln Arg Gln Ala Arg Gln Cys Gln Leu
                85                  90                  95
Gln Arg Pro Leu Arg Gly Phe Thr Trp Thr Thr Gly Asp Gln Asp Thr
            100                 105                 110
Ala Phe Thr Asn Trp Ala Gln Pro Ala Ser Gly Gly Pro Cys Pro Ala
        115                 120                 125
Gln Arg Cys Val Ala Leu Glu Ala Ser Gly Glu His Arg Trp Leu Glu
    130                 135                 140
Gly Ser Cys Thr Leu Ala Val Asp Gly Tyr Leu Cys Gln Phe Gly Phe
145                 150                 155                 160
Glu Gly Ala Cys Pro Ala Leu Gln Asp Glu Ala Gly Gln Ala Gly Pro
                165                 170                 175
Ala Val Tyr Thr Thr Pro Phe His Leu Val Ser Thr Glu Phe Glu Trp
            180                 185                 190
Leu Pro Phe Gly Ser Val Ala Ala Val Gln Cys Gln Ala Gly Arg Gly
        195                 200                 205
Ala Ser Leu Leu Cys Val Lys Gln Pro Glu Gly Gly Val Gly Trp Ser
    210                 215                 220
Arg Ala Gly Pro Leu Cys Leu Gly Thr Gly Cys Ser Pro Asp Asn Gly
225                 230                 235                 240
Gly Cys Glu His Glu Cys Val Glu Glu Val Asp Gly His Val Ser Cys
                245                 250                 255
Arg Cys Thr Glu Gly Phe Arg Leu Ala Ala Asp Gly Arg Ser Cys Glu
            260                 265                 270
Asp Pro Cys Ala Gln Ala Pro Cys Glu Gln Gln Cys Glu Pro Gly Gly
        275                 280                 285
Pro Gln Gly Tyr Ser Cys His Cys Arg Leu Gly Phe Arg Pro Ala Glu
    290                 295                 300
Asp Asp Pro His Arg Cys Val Asp Thr Asp Glu Cys Gln Ile Ala Gly
305                 310                 315                 320
Val Cys Gln Gln Met Cys Val Asn Tyr Val Gly Gly Phe Glu Cys Tyr
                325                 330                 335
Cys Ser Glu Gly His Glu Leu Glu Ala Asp Gly Ile Ser Cys Ser Pro
            340                 345                 350
Ala Gly Ala Met Gly Ala Gln Ala Ser Gln Asp Leu Gly Asp Glu Leu
        355                 360                 365
Leu Asp Asp Gly Glu Asp Glu Glu Asp Glu Asp Glu Ala Trp Lys Ala
    370                 375                 380
Phe Asn Gly Gly Trp Thr Glu Met Pro Gly Ile Leu Trp Met Glu Pro
385                 390                 395                 400
Thr Gln Pro Pro Asp Phe Ala Leu Ala Tyr Arg Pro Ser Phe Pro Glu
                405                 410                 415
Asp Arg Glu Pro Gln Ile Pro Tyr Pro Glu Pro Thr Trp Pro Pro Pro
            420                 425                 430
Leu Ser Ala Pro Arg Val Pro Tyr His Ser Ser Val Leu Ser Val Thr
        435                 440                 445
Arg Pro Val Val Val Ser Ala Thr His Pro Thr Leu Pro Ser Ala His
    450                 455                 460
Gln Pro Pro Val Ile Pro Ala Thr His Pro Ala Leu Ser Arg Asp His
465                 470                 475                 480
Gln Ile Pro Val Ile Ala Ala Asn Tyr Pro Asp Leu Pro Ser Ala Tyr
                485                 490                 495
Gln Pro Gly Ile Leu Ser Val Ser His Ser Ala Gln Pro Pro Ala His
```

```
                500                 505                 510
Gln Pro Pro Met Ile Ser Thr Lys Tyr Pro Glu Leu Phe Pro Ala His
        515                 520                 525
Gln Ser Pro Met Phe Pro Asp Thr Arg Val Ala Gly Thr Gln Thr Thr
    530                 535                 540
Thr His Leu Pro Gly Ile Pro Pro Asn His Ala Pro Leu Val Thr Thr
545                 550                 555                 560
Leu Gly Ala Gln Leu Pro Pro Gln Ala Pro Asp Ala Leu Val Leu Arg
                565                 570                 575
Thr Gln Ala Thr Gln Leu Pro Ile Ile Pro Thr Ala Gln Pro Ser Leu
            580                 585                 590
Thr Thr Thr Ser Arg Ser Pro Val Ser Pro Ala His Gln Ile Ser Val
        595                 600                 605
Pro Ala Ala Thr Gln Pro Ala Ala Leu Pro Thr Leu Leu Pro Ser Gln
    610                 615                 620
Ser Pro Thr Asn Gln Thr Ser Pro Ile Ser Pro Thr His Pro His Ser
625                 630                 635                 640
Lys Ala Pro Gln Ile Pro Arg Glu Asp Gly Pro Ser Pro Lys Leu Ala
                645                 650                 655
Leu Trp Leu Pro Ser Pro Ala Pro Thr Ala Ala Pro Thr Ala Leu Gly
            660                 665                 670
Glu Ala Gly Leu Ala Glu His Ser Gln Arg Asp Asp Arg Trp Leu Leu
        675                 680                 685
Val Ala Leu Leu Val Pro Thr Cys Val Phe Leu Val Val Leu Leu Ala
    690                 695                 700
Leu Gly Ile Val Tyr Cys Thr Arg Cys Gly Pro His Ala Pro Asn Lys
705                 710                 715                 720
Arg Ile Thr Asp Cys Tyr Arg Trp Val Ile His Ala Gly Ser Lys Ser
                725                 730                 735
Pro Thr Glu Pro Met Pro Pro Arg Gly Ser Leu Thr Gly Val Gln Thr
            740                 745                 750
Cys Arg Thr Ser Val
        755
```

<210> 197
<211> 2973
<212> DNA
<213> Homo sapiens

<400> 197

```
gccccttgcg cctccttgcc cggccgcgcc cagcccggcg tcccgagcag cgcaggggag      60
gatccccgcg cagtgacccg ggagccacca cagactctgg gaggctcggc ggctggagca     120
gcaggcagct ccccgcagct cccggcgctt ccaggcagct ctctgagccg tgccagaggc     180
ccggcccgcc attcccagcc ccgagccatg atgaagactt tgtccagcgg gaactgcacg     240
ctcagtgtgc ccgccaaaaa ctcataccgc atggtggtgc tgggtgcctc tcgggtgggc     300
aagagctcca tcgtgtctcg cttcctcaat ggccgctttg aggaccagta cacacccacc     360
atcgaggact tccaccgtaa ggtatacaac atccgcggcg acatgtacca gctcgacatc     420
ctggatacct ctggcaacca ccccttcccc gccatgcgca ggctgtccat cctcacaggg     480
gatgtcttca tcctggtgtt cagcctggat aaccgggagt ccttcgatga ggtcaagcgc     540
cttcagaagc agatcctgga ggtcaagtcc tgcctgaaga acaagaccaa ggaggcggcg     600
gagctgccca tggtcatctg tggcaacaag aacgaccacg gcgagctgtg ccgccaggtg     660
cccaccaccg aggccgagct gctggtgtcg ggcgacgaga actgcgccta cttcgaggtg     720
tcggccaaga agaacaccaa cgtggacgag atgttctacg tgctcttcag catggccaag     780
ctgccacacg agatgagccc cgccctgcat cgcaagatct ccgtgcagta cggtgacgcc     840
ttccacccca ggcccttctg catgcgccgc gtcaaggaga tggacgccta tggcatggtc     900
tcgcccttcg cccgccgccc cagcgtcaac agtgacctca agtacatcaa ggccaaggtc     960
cttcgggaag gccaggcccg tgagagggac aagtgcacca tccagtgagc gagggatgct    1020
ggggcggggc ttggccagtg ccttcaggga ggtggcccca gatgcccact gtgcgcatct    1080
ccccaccgag gccccggcag cagtcttgtt cacagacctt aggcaccaga ctggaggccc    1140
ccgggcgctg gcctccgcac attcgtctgc cttctcacag ctttcctgag tccgcttgtc    1200
cacagctcct tggtggtttc atctcctctg tgggaggaca catctctgca gcctcaagag    1260
```

```
ttaggcagag actcaagtta caccttcctc tcctggggtt ggaagaaatg ttgatgccag    1320
aggggtgagg attgctgcgt catatggagc ctcctgggac aagcctcagg atgaaaagga    1380
cacagaaggc cagatgagaa aggtctcctc tctcctggca taacacccag cttggtttgg    1440
gtggcagctg ggagaacttc tctcccagcc ctgcaactct tacgctctgg ttcagctgcc    1500
tctgcacccc ctcccacccc cagcacacac acaagttggc ccccagctgc gcctgacatt    1560
gagccagtgg actctgtgtc tgaaggggggc gtggccacac ctcctagacc acgcccacca    1620
cttagaccac gcccacctcc tgaccgcgtt cctcagcctc ctctcctagg tccctccgcc    1680
cgacagttgt gctttgttgt ggttgcagct gttttcgtgt catgtatagt agtagaaatg    1740
gaaatcattg tactgtaaaa gcctagtgac tccctccttg gccaggccct cacccagttc    1800
agatccacgg cctccacccg ggacgccttc ctcctctgct cccaaacagg gtttccgtgg    1860
cctgtttgca gctagacatt gacctccgcc attgagctcc acggtttaca gacaattgca    1920
caagcgtggg gtgggcaggc caggactgct ttttttaat gctcccattt cacagaggat    1980
accaccgaga ctcggagggg acacgatgag caccaggccc cacctttgtc ccctagcaaa    2040
ttcagggtac agctccacct agaaccaggc tgccctctac tgtgctcgtt cctcaagcat    2100
ttattaagca cctactgggt gctgggttca ctgtgtccta ggaaaccaag agggtcccca    2160
gtcctggcct ctgcccgccc ctgctgcccc accaccttct gcacacacag cggtggggag    2220
gcggggagga gcagctggga cccagaactg agcctgggag ggatccgaca gaaaagctca    2280
gggcgggtct tctccttgtg cccgggattg ggctatgctg ggtaccacca tgtactcagg    2340
catggtgggt tttgaaccca taaaccaaag gcccttgtca tcagctctta acaagtatat    2400
tttgtatttt aatctctcta aacatattga agttttaggg ccctaaggaa ccttagtgat    2460
cttctattgg gtctttctga ggttcagaga gggtaagtaa cttcctccag gtcacacagc    2520
aagtctgtgg gtggcagaag caagctagcg ctgggcattc agtacatacc acgatgtgct    2580
ccctctcttg atgcttggcc cctggggcct tcagggcttt gggacatctt gtcctcaacc    2640
ctctccctag atcagtctgt gagggtccct gtagatattg tgtacaccat gcccatgtat    2700
atacaagtac acacagatgt acacacagat gtacacatgc tccagcccca gctctgcata    2760
cctgcacctg caccccagcc ttggcccctg cctgcgtctg tgctcaaagc agcagctcca    2820
accctgcctc tgtccccttc cccacccact gcctgagcct tctgagcaga ccaggtacct    2880
tggctgcacc ggtgtgtggc ccgctctcac ccaggcacag ccccgccacc atggatctcc    2940
gtgtacacta tcaataaaag tgggtttgtt aca                                 2973
```

<210> 198
<211> 266
<212> PRT
<213> Homo sapiens

<400> 198

```
Met Met Lys Thr Leu Ser Ser Gly Asn Cys Thr Leu Ser Val Pro Ala
 1               5                  10                  15
Lys Asn Ser Tyr Arg Met Val Val Leu Gly Ala Ser Arg Val Gly Lys
            20                  25                  30
Ser Ser Ile Val Ser Arg Phe Leu Asn Gly Arg Phe Glu Asp Gln Tyr
        35                  40                  45
Thr Pro Thr Ile Glu Asp Phe His Arg Lys Val Tyr Asn Ile Arg Gly
    50                  55                  60
Asp Met Tyr Gln Leu Asp Ile Leu Asp Thr Ser Gly Asn His Pro Phe
65                  70                  75                  80
Pro Ala Met Arg Arg Leu Ser Ile Leu Thr Gly Asp Val Phe Ile Leu
                85                  90                  95
Val Phe Ser Leu Asp Asn Arg Glu Ser Phe Asp Glu Val Lys Arg Leu
            100                 105                 110
Gln Lys Gln Ile Leu Glu Val Lys Ser Cys Leu Lys Asn Lys Thr Lys
        115                 120                 125
Glu Ala Ala Glu Leu Pro Met Val Ile Cys Gly Asn Lys Asn Asp His
    130                 135                 140
Gly Glu Leu Cys Arg Gln Val Pro Thr Thr Glu Ala Glu Leu Leu Val
145                 150                 155                 160
Ser Gly Asp Glu Asn Cys Ala Tyr Phe Glu Val Ser Ala Lys Lys Asn
                165                 170                 175
Thr Asn Val Asp Glu Met Phe Tyr Val Leu Phe Ser Met Ala Lys Leu
            180                 185                 190
Pro His Glu Met Ser Pro Ala Leu His Arg Lys Ile Ser Val Gln Tyr
```

```
        195                 200                 205
Gly Asp Ala Phe His Pro Arg Pro Phe Cys Met Arg Arg Val Lys Glu
    210                 215                 220
Met Asp Ala Tyr Gly Met Val Ser Pro Phe Ala Arg Arg Pro Ser Val
225                 230                 235                 240
Asn Ser Asp Leu Lys Tyr Ile Lys Ala Lys Val Leu Arg Glu Gly Gln
                245                 250                 255
Ala Arg Glu Arg Asp Lys Cys Thr Ile Gln
            260                 265
```

<210> 199
<211> 2159
<212> DNA
<213> Homo sapiens

<400> 199

```
ggcggcggca tggcgaggtt cccgaaggcc gacctggccg ctgcaggagt tatgttactt      60
tgccacttct tcacggacca gtttcagttc gccgatggga aacccggaga ccaaatcctt     120
gattggcagt atggagttac tcaggccttc cctcacacag aggaggaggt ggaagttgat     180
tcacacgcgt acagccacag gtggaaaaga aacttggact ttctcaaggc ggtagacacg     240
aaccgagcaa gcgtcggcca agactctcct gagcccagaa gcttcacaga cctgctgctg     300
gatgatgggc aggacaataa cactcagatc gaggaggata cagaccacaa ttactatata     360
tctcgaatat atggtccatc tgattctgcc agccgggatt tatgggtgaa catagaccaa     420
atggaaaaag ataaagtgaa gattcatgga atattgtcca atactcatcg gcaagctgca     480
agagtgaatc tgtccttcga ttttccattt tatggccact tcctacgtga aatcactgtg     540
gcaaccgggg gtttcatata cactggagaa gtcgtacatc gaatgctaac agccacacag     600
tacatagcac ctttaatggc aaatttcgat cccagtgtat ccagaaattc aactgtcaga     660
tattttgata atggcacagc acttgtggtc cagtgggacc atgtacatct ccaggataat     720
tataacctgg gaagcttcac attccaggca accctgctca tggatggacg aatcatcttt     780
ggatacaaag aaattcctgt cttggtcaca cagataagtt caaccaatca tccagtgaaa     840
gtcggactgt ccgatgcatt tgtcgttgtc cacaggatcc aacaaattcc caatgttcga     900
agaagaacaa tttatgaata ccaccgagta gagctacaaa tgtcaaaaat taccaacatt     960
tcggctgtgg agatgacccc attacccaca tgcctccagt ttaacagatg tggcccctgt    1020
gtatcttctc agattggctt caactgcagt tggtgtagta aacttcaaag atgttccagt    1080
ggatttgatc gtcatcggca ggactgggtg gacagtggat gccctgaaga gtcaaaagag    1140
aagatgtgtg agaatacaga accagtggaa acttcttctc gaaccaccac aaccatagga    1200
gcgacaacca cccagttcag ggtcctaact accaccagaa gagcagtgac ttctcagttt    1260
cccaccagcc tccctacaga agatgatacc aagatagcac tacatctaaa agataatgga    1320
gcttctacag atgacagtgc agctgagaag aaaggggaa ccctccacgc tggcctcatc    1380
gttggaatcc tcatcctggt cctcattgta gccacagcca ttcttgtgac agtctatatg    1440
tatcaccacc caacatcagc agccagcatc ttctttattg agagacgccc aagcagatgg    1500
cctgcgatga agtttagaag aggctctgga catcctgcct atgctgaagt tgaaccagtt    1560
ggagagaaag aaggctttat tgtatcagag cagtgctaaa atttctagga cagaacaaca    1620
ccagtactgg tttacaggtg ttaagactaa aattttgcct atacctttaa gacaaacaaa    1680
caaacacaca cacaaacaag ctctaagctg ctgtagcctg aagaagacaa gatttctgga    1740
caagctcagc ccaggaaaca aagggtaaac aaaaaactaa aacttataca agataccatt    1800
tacactgaac atagaattcc ctagtggaat gtcatctata gttcactcgg aacatctccc    1860
gtggacttat ctgaagtatg acaagattat aatgcttttg gcttaggtgc agggttgcaa    1920
agggatcaga aaaaaaaaat cataataaag ctttagttca tgagggatcg acacctttgg    1980
ttcaaatgtt ctctgatgtc tcaaagataa ctgttttcca aagcctgaac cctttcactc    2040
aaaagagcaa tgatgaatgt ctcaagattg ctaagaaaaa cagcccatgc aagagtgaga    2100
acaaacacaa aataagagat tttctacatt ttcaaaaaaa aaaaaaaaaa aaaaaaaaa     2159
```

<210> 200
<211> 529
<212> PRT
<213> Homo sapiens

<400> 200

```
Met Ala Arg Phe Pro Lys Ala Asp Leu Ala Ala Ala Gly Val Met Leu
 1               5                  10                  15
```

```
Leu Cys His Phe Phe Thr Asp Gln Phe Gln Phe Ala Asp Gly Lys Pro
            20                  25                  30
Gly Asp Gln Ile Leu Asp Trp Gln Tyr Gly Val Thr Gln Ala Phe Pro
        35                  40                  45
His Thr Glu Glu Glu Val Glu Val Asp Ser His Ala Tyr Ser His Arg
    50                  55                  60
Trp Lys Arg Asn Leu Asp Phe Leu Lys Ala Val Asp Thr Asn Arg Ala
65                  70                  75                  80
Ser Val Gly Gln Asp Ser Pro Glu Pro Arg Ser Phe Thr Asp Leu Leu
                85                  90                  95
Leu Asp Asp Gly Gln Asp Asn Asn Thr Gln Ile Glu Glu Asp Thr Asp
            100                 105                 110
His Asn Tyr Tyr Ile Ser Arg Ile Tyr Gly Pro Ser Asp Ser Ala Ser
        115                 120                 125
Arg Asp Leu Trp Val Asn Ile Asp Gln Met Glu Lys Asp Lys Val Lys
    130                 135                 140
Ile His Gly Ile Leu Ser Asn Thr His Arg Gln Ala Ala Arg Val Asn
145                 150                 155                 160
Leu Ser Phe Asp Phe Pro Phe Tyr Gly His Phe Leu Arg Glu Ile Thr
                165                 170                 175
Val Ala Thr Gly Gly Phe Ile Tyr Thr Gly Glu Val Val His Arg Met
            180                 185                 190
Leu Thr Ala Thr Gln Tyr Ile Ala Pro Leu Met Ala Asn Phe Asp Pro
        195                 200                 205
Ser Val Ser Arg Asn Ser Thr Val Arg Tyr Phe Asp Asn Gly Thr Ala
    210                 215                 220
Leu Val Val Gln Trp Asp His Val His Leu Gln Asp Asn Tyr Asn Leu
225                 230                 235                 240
Gly Ser Phe Thr Phe Gln Ala Thr Leu Leu Met Asp Gly Arg Ile Ile
                245                 250                 255
Phe Gly Tyr Lys Glu Ile Pro Val Leu Val Thr Gln Ile Ser Ser Thr
            260                 265                 270
Asn His Pro Val Lys Val Gly Leu Ser Asp Ala Phe Val Val Val His
        275                 280                 285
Arg Ile Gln Gln Ile Pro Asn Val Arg Arg Arg Thr Ile Tyr Glu Tyr
    290                 295                 300
His Arg Val Glu Leu Gln Met Ser Lys Ile Thr Asn Ile Ser Ala Val
305                 310                 315                 320
Glu Met Thr Pro Leu Pro Thr Cys Leu Gln Phe Asn Arg Cys Gly Pro
                325                 330                 335
Cys Val Ser Ser Gln Ile Gly Phe Asn Cys Ser Trp Cys Ser Lys Leu
            340                 345                 350
Gln Arg Cys Ser Ser Gly Phe Asp Arg His Arg Gln Asp Trp Val Asp
        355                 360                 365
Ser Gly Cys Pro Glu Glu Ser Lys Glu Lys Met Cys Glu Asn Thr Glu
    370                 375                 380
Pro Val Glu Thr Ser Ser Arg Thr Thr Thr Thr Ile Gly Ala Thr Thr
385                 390                 395                 400
Thr Gln Phe Arg Val Leu Thr Thr Thr Arg Arg Ala Val Thr Ser Gln
                405                 410                 415
Phe Pro Thr Ser Leu Pro Thr Glu Asp Asp Thr Lys Ile Ala Leu His
            420                 425                 430
Leu Lys Asp Asn Gly Ala Ser Thr Asp Asp Ser Ala Ala Glu Lys Lys
        435                 440                 445
Gly Gly Thr Leu His Ala Gly Leu Ile Val Gly Ile Leu Ile Leu Val
    450                 455                 460
Leu Ile Val Ala Thr Ala Ile Leu Val Thr Val Tyr Met Tyr His His
465                 470                 475                 480
Pro Thr Ser Ala Ala Ser Ile Phe Phe Ile Glu Arg Arg Pro Ser Arg
                485                 490                 495
Trp Pro Ala Met Lys Phe Arg Arg Gly Ser Gly His Pro Ala Tyr Ala
```

```
            500                 505                 510
Glu Val Glu Pro Val Gly Glu Lys Glu Gly Phe Ile Val Ser Glu Gln
        515                 520                 525
Cys
```

<210> 201
<211> 2608
<212> DNA
<213> Homo sapiens

<400> 201

```
gaggtagggg ctgagagagg cttgaggtgg aagtgggggt cgggcactct gacctggtcg      60
aggaggggct agggtttgaa ccggggacag agtctaggtg agctggggct gggagctatt     120
agcgtagagg atccgggttc ggttgctctg gcgagggctc cagcatcaca ggcggcggct     180
gcgggcgcag agcggaaatg cagcggcttg gggccaccct gctgtgcctg ctgctggcgg     240
cggcggtccc cacggccccc gcgcccgctc cgacggcgac ctcggctcca gtcaagcccg     300
gcccggctct cagctacccg caggaggagg ccaccctcaa tgagatgttc cgcgaggttg     360
aggaactgat ggaggacacg cagcacaaat tgcgcagcgc ggtggaagag atggaggcag     420
aagaagctgc tgctaaagca tcatcagaag tgaacctggc aaacttacct cccagctatc     480
acaatgagac caacacagac acgaaggttg gaaataatac catccatgtg caccgagaaa     540
ttcacaagat aaccaacaac cagactggac aaatggtctt ttcagagaca gttatcacat     600
ctgtgggaga cgaagaaggc agaaggagcc acgagtgcat catcgacgag gactgtgggc     660
ccagcatgta ctgccagttt gccagcttcc agtacacctg ccagccatgc cggggccaga     720
ggatgctctg cacccgggac agtgagtgct gtggagacca gctgtgtgtc tggggtcact     780
gcaccaaaat ggccaccagg ggcagcaatg ggaccatctg tgacaaccag agggactgcc     840
agccggggct gtgctgtgcc ttccagagag gcctgctgtt ccctgtgtgc acacccctgc     900
ccgtggaggg cgagctttgc catgaccccg ccagccggct tctggacctc atcacctggg     960
agctagagcc tgatggagcc ttggaccgat gcccttgtgc cagtggcctc ctctgccagc    1020
cccacagcca cagcctggtg tatgtgtgca agccgacctt cgtggggagc cgtgaccaag    1080
atggggagat cctgctgccc agagaggtcc ccgatgagta tgaagttggc agcttcatgg    1140
aggaggtgcg ccaggagctg gaggacctgg agaggagcct gactgaagag atggcgctgg    1200
gggagcctgc ggctgccgcc gctgcactgc tgggagggga agagatttag atctggacca    1260
ggctgtgggt agatgtgcaa tagaaatagc taatttattt ccccaggtgt gtgctttagg    1320
cgtgggctga ccaggcttct tcctacatct tcttcccagt aagtttcccc tctggcttga    1380
cagcatgagg tgttgtgcat ttgttcagct cccccaggct gttctccagg cttcacagtc    1440
tggtgcttgg gagagtcagg cagggttaaa ctgcaggagc agtttgccac ccctgtccag    1500
attattggct gctttgcctc taccagttgg cagacagccg tttgttctac atggctttga    1560
taattgtttg aggggaggag atggaaacaa tgtggagtct ccctctgatt ggttttgggg    1620
aaatgtggag aagagtgccc tgctttgcaa acatcaacct ggcaaaaatg caacaaatga    1680
attttccacg cagttctttc catgggcata ggtaagctgt gccttcagct gttgcagatg    1740
aaatgttctg ttcaccctgc attacatgtg tttattcatc cagcagtgtt gctcagctcc    1800
tacctctgtg ccagggcagc attttcatat ccaagatcaa ttccctctct cagcacagcc    1860
tggggagggg gtcattgttc tcctcgtcca tcagggatct cagaggctca gagactgcaa    1920
gctgcttgcc caagtcacac agctagtgaa gaccagagca gtttcatctg gttgtgactc    1980
taagctcagt gctctctcca ctaccccaca ccagccttgg tgccaccaaa agtgctcccc    2040
aaaaggaagg agaatgggat ttttcttttg aggcatgcac atctggaatt aaggtcaaac    2100
taattctcac atccctctaa aagtaaacta ctgttaggaa cagcagtgtt ctcacagtgt    2160
ggggcagccg tccttctaat gaagacaatg atattgacac tgtccctctt tggcagttgc    2220
attagtaact ttgaaaggta tatgactgag cgtagcatac aggttaacct gcagaaacag    2280
tacttaggta attgtagggc gaggattata aatgaaattt gcaaaatcac ttagcagcaa    2340
ctgaagacaa ttatcaacca cgtggagaaa atcaaaccga gcagggctgt gtgaaacatg    2400
gttgtaatat gcgactgcga acactgaact ctacgccact ccacaaatga tgttttcagg    2460
tgtcatggac tgttgccacc atgtattcat ccagagttct taaagtttaa agttgcacat    2520
gattgtataa gcatgctttc tttgagtttt aaattatgta taaacataag ttgcatttag    2580
aaatcaagca taaatcactt caactgct                                       2608
```

<210> 202
<211> 350
<212> PRT
<213> Homo sapiens

<400> 202

```
Met Gln Arg Leu Gly Ala Thr Leu Leu Cys Leu Leu Leu Ala Ala Ala
 1               5                  10                  15
Val Pro Thr Ala Pro Ala Pro Ala Pro Thr Ala Thr Ser Ala Pro Val
            20                  25                  30
Lys Pro Gly Pro Ala Leu Ser Tyr Pro Gln Glu Glu Ala Thr Leu Asn
        35                  40                  45
Glu Met Phe Arg Glu Val Glu Glu Leu Met Glu Asp Thr Gln His Lys
    50                  55                  60
Leu Arg Ser Ala Val Glu Glu Met Glu Ala Glu Glu Ala Ala Ala Lys
65                  70                  75                  80
Ala Ser Ser Glu Val Asn Leu Ala Asn Leu Pro Pro Ser Tyr His Asn
                85                  90                  95
Glu Thr Asn Thr Asp Thr Lys Val Gly Asn Asn Thr Ile His Val His
            100                 105                 110
Arg Glu Ile His Lys Ile Thr Asn Asn Gln Thr Gly Gln Met Val Phe
        115                 120                 125
Ser Glu Thr Val Ile Thr Ser Val Gly Asp Glu Glu Gly Arg Arg Ser
    130                 135                 140
His Glu Cys Ile Ile Asp Glu Asp Cys Gly Pro Ser Met Tyr Cys Gln
145                 150                 155                 160
Phe Ala Ser Phe Gln Tyr Thr Cys Gln Pro Cys Arg Gly Gln Arg Met
                165                 170                 175
Leu Cys Thr Arg Asp Ser Glu Cys Cys Gly Asp Gln Leu Cys Val Trp
            180                 185                 190
Gly His Cys Thr Lys Met Ala Thr Arg Gly Ser Asn Gly Thr Ile Cys
        195                 200                 205
Asp Asn Gln Arg Asp Cys Gln Pro Gly Leu Cys Cys Ala Phe Gln Arg
    210                 215                 220
Gly Leu Leu Phe Pro Val Cys Thr Pro Leu Pro Val Glu Gly Glu Leu
225                 230                 235                 240
Cys His Asp Pro Ala Ser Arg Leu Leu Asp Leu Ile Thr Trp Glu Leu
                245                 250                 255
Glu Pro Asp Gly Ala Leu Asp Arg Cys Pro Cys Ala Ser Gly Leu Leu
            260                 265                 270
Cys Gln Pro His Ser His Ser Leu Val Tyr Val Cys Lys Pro Thr Phe
        275                 280                 285
Val Gly Ser Arg Asp Gln Asp Gly Glu Ile Leu Leu Pro Arg Glu Val
    290                 295                 300
Pro Asp Glu Tyr Glu Val Gly Ser Phe Met Glu Glu Val Arg Gln Glu
305                 310                 315                 320
Leu Glu Asp Leu Glu Arg Ser Leu Thr Glu Glu Met Ala Leu Gly Glu
                325                 330                 335
Pro Ala Ala Ala Ala Ala Ala Leu Leu Gly Gly Glu Glu Ile
            340                 345                 350
```

<210> 203
<211> 7540
<212> DNA
<213> Homo sapiens

<400> 203

```
gtgagttacg ccactatggc ggacggggca ccccggcccc agctttaccg cagcgtctcg      60
ttcaagctgc tggagcgctg gagcggcggc cccgggctga gggaggagga cacggacacc     120
cccggcttga ggcgacgcgc ctcgtgccgg ccgaccacgg ctgcccgggg ccagccctct     180
cggcgcgtgt ccaagctggc gtctgggccc ctggccgccc ccgcgcagcc gcgcccgctc     240
cgcagcctct cgccgtcggt tcgccagctc tcccggcgct tcgacgcgcc gcgtctggac     300
gacggctccg ctgggacccg agacggaggc gtcttacccg cggccgcgga agaagcggcc     360
gagggcccag cgcgaggagc ctggcccagc gtcaccgaga tgcgcaagct cttcggcggt     420
cctggctcca ggaggcccag cgccgactct gaatccccag gaacgcccag ccccgacggt     480
```

gccgcgtggg agcctccggc tcgggagtcg cggcagccac cgacgccacc ccctcggaca 540
tgcttccccc tggcgggtct gcgttcggcg cggcccctga ccgggccgga gaccgaaggg 600
aggctgcgcc ggccgcagca gcaacaggag cgggcgcagc gtccagcgga tggtttacat 660
tcttggcata tcttctccca accgcaggcc ggggcccggg cctcctgctc ctcctcctcc 720
atcgccgcct cctatcctgt cagccgcagt cgtgctgcca gctccagcga ggaggaagag 780
gagggcccgc cgcagctgcc tggagcccag agtccggcct accacggcgg ccactcctcg 840
ggcagtgacg acgaccgaga cggtgagggc ggccaccgct ggggagggag gcccgggctc 900
aggcctggaa gctccctatt ggatcaggac tgcaggcctg acagtgatgg gttaaatcta 960
agcagcatga actcagcagg ggtttctggg agccctgagc ccccaacatc tccaagagcc 1020
cctagagaag aaggactccg ggagtggggt agtggctctc cgccctgcgt cccaggtccc 1080
caggagggac ttcggcctat gtctgactct gtgggaggag ctttccgtgt ggccaaggtg 1140
agctttccct cgtacctggc cagccccgca ggctcccgcg gtagcagccg ttattccagc 1200
acggagaccc tcaaggacga cgacctatgg tctagtaggg gttctggggg ctggggcgtg 1260
taccgctccc ctagctttgg agctggggaa gggctcctgc ggtcccaggc tcgaacccgt 1320
gccaaaggac ctggaggcac ctctagggca ttgagggatg gaggatttga gcctgaaaag 1380
agtcgacagc ggaagtccct gtcaaatcca gatatcgcct cagagaccct gacgcttctc 1440
agtttcctgc gctcagacct ttcagagctg agggtccgaa aacctggtgg gagctccggg 1500
gaccgtggaa gcaaccccct agatggcaga gactcaccat ccgcaggtgg ccctgtgggg 1560
caacttgaac ccatacccat cccagcccca gcatcacctg gcacgcgccc cacactcaag 1620
gacttgacag ccactctgcg gagagcaaag tcattcacct gctctgagaa gcccatggcc 1680
cgccgcctgc cccgcaccag tgctctgaag tccagctcct ccgagctcct gctcacaggc 1740
cctggtgccg aggaggatcc gctgcccctc atcgtccagg accaatatgt gcaggaggcc 1800
cgccaggttt ttgagaagat ccagcgcatg ggtgcccaac aagatgatgg aagcgatgcc 1860
ccccctggaa gccctgactg ggcaggggat gtgacccgag ggcagcggtc ccaggaggag 1920
ctctcaggcc ctgagtccag tctgacagat gaaggcattg gggcagaccc tgagcctcct 1980
gttgcagcat tttgcggcct gggtaccaca gggatgtggc gacctctttc ctcatcctcg 2040
gcccagacga accaccatgg ccctgggact gaggacagtc tgggcgggtg ggccctggtg 2100
tcgcctgaga cccctcccac accaggtgcc ctccgccgac gacgcaaagt cccaccttca 2160
ggttctggtg ggagcgaatt gagcaatggg gaggcagggg aggcctacag gtccctgagt 2220
gacccaattc ctcagcgcca ccgggctgcc acctctgaag agcctactgg gttctctgtg 2280
gacagcaacc tcctgggctc actgagcccc aagacagggc tccctgccac ctcagccatg 2340
gatgagggct tgaccagtgg tcacagtgac tggtctgtgg gcagtgaaga gagcaaggga 2400
tatcaggagg ttattcagag catagttcag gggcctggca ccctggggcg tgtggtggac 2460
gacaggattg ctggcaaagc ccccaagaag aaatccctga gtgaccccag ccgccgtggg 2520
gagctggctg ggcctggatt cgagggccct ggaggggagc ccatccgaga agttgagccc 2580
atgctgcctc catccagcag cgagcccatc cttgtagagc agcgggcaga gccagaagaa 2640
cctggtgcca ccaggagccg ggcacagtct gaaagggccc tacctgaggc tctgcctccc 2700
cctgccactg cccaccgaaa ctttcacctt gaccccaagc tggctgacat tctgtccccg 2760
aggctaatcc gccgaggctc caagaagcgc ccagctcgga gtagtcacca ggagcttcgg 2820
agagacgagg gcagtcagga ccagactggc agcctgtctc gggcccggcc ctcctccaga 2880
cacgttcgcc atgccagtgt gcccgccaca tttatgccta ttgtggtgcc tgagccacca 2940
acttctgttg gtccccctgt ggctgtgcca gaacccatag gcttccctac ccgagcccat 3000
cccacgttgc aggcaccatc gctcgaggac gtcaccaagc agtacatgct gaacctgcac 3060
tccggtgagg tccctgcccc agtgccagtg gacatgccct gcttgcctct ggctgcaccg 3120
ccctctgctg aggccaagcc ccctgaggca gctcggcctg cagatgagcc tacccctgcc 3180
agcaagtgct gcagcaagcc acaggtggac atgcggaagc acgtggccat gaccctgctg 3240
gacacagagc agtcgtatgt ggagtcgctg cgcaccctga tgcagggcta catgcagccg 3300
ctgaagcagc cagagaactc cgtgctctgt gacccttcac tggtggacga gatcttcgac 3360
cagatccccg agctcctgga gcaccacgag caattcctgg agcaggttcg gcactgcatg 3420
cagacctggc atgcccagca gaaggtggga gccctgctcg tccagtcgtt ctccaaggat 3480
gtcctagtaa acatctattc tgcctatatc gataacttcc tcaatgcaaa ggatgctgtg 3540
cgtgtggcca aggaggcgag gcctgccttt ctcaagttcc tagagcaaag catgcgtgag 3600
aacaaggaga agcaggcgct gtctgacctc atgatcaagc ctgtgcagcg gatcccacgc 3660
tacgagcttc tggtgaagga cctcctgaag catacacctg aggaccaccc ggaccatcca 3720
ctcctgctgg aggcgcagcg gaacatcaag caggtggctg agcgcatcaa caagggtgtg 3780
cggagtgccg aggaggcgga gcgccatgcc cgtgtgctgc aggagataga ggctcacatc 3840
gagggcatgg aggatctcca ggcccctctg cggcggttcc tgagacagga gatggtcatt 3900
gaagtgaagg cgatcggtgg caagaaggac cggtctctct tcctgttcac ggacctcatc 3960
gtctgcacca ctctgaagcg aaagtcaggc tccctgcggc gcagctccat gagcctgtac 4020
acggcagcca gtgtcattga cacagccagc aagtacaaga tgctgtggaa gctgccgctg 4080
gaagacgcag acatcatcaa aggggcatcc caagccacca atcgggagaa catccagaag 4140

gccatcagcc gccttgatga ggacctcacc accctgggcc aaatgagcaa gctctctgag 4200
agccttggtt tcccccacca gagcctggac gatgcactgc gggacctctc agctgccatg 4260
caccgggacc tgtcggagaa gcaggcgctg tgctacgcgc tttccttccc gccaaccaag 4320
ctggagctgt gcgccactcg gcccgagggc accgactcct acatttttga gttccctcac 4380
cctgacgccc gccttggttt tgaacaggcc ttcgatgagg ccaagaggaa gctggcatcc 4440
agcaaaagct gtctagaccc tgagttcctg aaggccatcc ccatcatgaa aacccgcagt 4500
ggcatgcagt tctcctgtgc ggctcccacc ctgaacagct gcccggagcc ctcgcctgag 4560
gtatgggtct gcaacagcga cggctacgtg ggccaggtgt gcctgctgag cctgcgcgcc 4620
gagccggacg tggaggcctg catcgccgtc tgttccgccc gcatcctctg catcggggcg 4680
gtgcccgggc tgcagcctcg ctgccaccgg gagcctcctc cgtcgctgag gagtcctcca 4740
gagacggcac cggagcccgc cgggccggag ctggacgtcg aggccgctgc agacgaggaa 4800
gccgcgacgc tcgcggagcc ggggccgcag ccctgccttc acatctccat tgcaggctcg 4860
ggcttggaga tgacgccggg cctcggcgag ggtgaccccc gcccagagct ggtgcccttt 4920
gacagtgact ctgacgatga gtcttcgccc agcccctcgg ggacgctgca gagccaggcc 4980
agccggtcca ccatctcctc cagctttggc aatgaggaga ccccgagttc caaggaggcc 5040
acggcagaga ccaccagctc agaggaggag caggagccag gcttcctgcc actgtctggc 5100
tcctttgggc ctggtggtcc ctgcggcacc agcccaatgg atgggagagc ccttcgccgc 5160
tccagccacg gctccttcac ccggggcagc cttgaggacc tgctgagtgt cgaccctgag 5220
gcctaccaga gctccgtgtg gctgggcact gaggatggct gtgtccacgt gtaccagtcc 5280
tccgacagca tccgtgaccg caggaacagc atgaagctcc agcatgcggc ctctgtgacc 5340
tgcatcttgt atctgaataa ccaggtgttt gtgtctctgg ccaatggaga gcttgtggtc 5400
taccaaaggg aagcaggcca tttctgggac ccccagaact tcaaatcagt gaccttgggc 5460
acccagggga gccccatcac caagatggta tctgtgggtg ggcggctgtg gtgtggctgc 5520
cagaaccgag tccttgtcct gagccctgac acgctgcagc tggagcacat gttttacgtg 5580
ggtcaggatt caagccgctg cgtggcttgc atggtggact ccagcctggg tgtgtgggtg 5640
acattgaaag gtagtgccca cgtgtgtctc taccatccag acacctttga gcagctggca 5700
gaagtagacg tcactcctcc cgtgcacagg atgctggcag gctcggatgc catcatccgg 5760
cagcacaagg ctgcctgtct gcgaatcaca gcgctgctgg tgtgtgagga gctgctgtgg 5820
gtgggcacca gtgctggtgt cgtcctcacc atgcccactt cgcccggtac tgtcagctgc 5880
ccacgggcac cactcagtcc cacaggcctc ggccagggac acaccggcca cgtccgcttc 5940
ttggctgcag tccagctgcc agatggcttc aacctgctct gcccaacccc accacctccc 6000
ccagacacag gccccgagaa gctgccatca ctggagcacc gggactcccc ttggcaccga 6060
ggccccgccc ctgccaggcc taaaatgctg gttatcagtg gaggtgatgg ctatgaggac 6120
ttccgactca gcagtggggg cggcagcagc agtgagactg tgggtcgaga cgacagcaca 6180
aaccacctcc tcctgtggag ggtgtgaccc tgtctgccgt ggcccaggac tcgcccgccc 6240
acctgccttc agcctgcttg cctctcccta gcccacacgc agactttgac caggagtatc 6300
cagccagggg cacacatgtg cctgcgtggg ctctgccttg tcttcgcgga agcattcctg 6360
atggaacacc cactggccag ccaggccatg gcttctcccg accctctggc tgccccggtg 6420
cttccagtca tgatcgggtg ggggacatgt gggctgacca ggacctctga ccctgggagc 6480
ttctaccaaa gacacagctg ggtctggacc ccacggggct ggggagggcc atgtgcaata 6540
tttggagggt tttctggagg gcagcaggaa ggctggggaa ttccccatgt acagtattta 6600
tgtttctttt tagatgtgta ccttcccaag cacttattta tgcagtgacc tggtcacctg 6660
gggtgggggt gatttgagga aatgacatga ggaaaagaaa cctattcctg ccctggggac 6720
caccctggga ctctaaccaa gccttcctgg agggacccat gcgcccctga gccccattcc 6780
attcatacag acacacacgt acgcacactg catgtccaag gccctaaaca ttgcccgttg 6840
acataaactt tccagggccc cagcctgatg gggctgccct cagtcctcta gatcaagatg 6900
ctgactatta gggggcagtg attgccatct ggggacctgt caggctttgt catttcccag 6960
tttgttggtg gtgcctttag tggttcccta atttgggaac actgatgggg ccttggacag 7020
ggctttctct caggtaggag aaatgggccc atgatctcct cacagtcgcc cccagtcctt 7080
ggccctgctt ccctgtgtct catgcactgg cacatatggt caccttggag ggcagaccta 7140
ggagcccctc tgaccactga atccgtctcc acacccttc tgccaaggga agcccttca 7200
ggaaggaccc cccaaagctg aggggctgaa tgtagccttt tcaacagaga aggctcccac 7260
ttgagagcag cctctacctg acccccctgga ccacagagag ccactctgac cctcagcccc 7320
ctcgcttctt cagctaaaac tccaaaggtt tggtttcaga tggggtttgt tttgttctgt 7380
ttggttttgg ttttgtttgg ggtgggtggg tcattgcggt cttagattat gtttctcttg 7440
ctaccaaaca gtcatgtatt aactctcttt ggatgatgaa gtttaaagag tcaataaata 7500
gaaacaccag atgactgcaa aaaaaaaaaa aaaaaaaaaa 7540

<210> 204

<211> 2063
<212> PRT
<213> Homo sapiens

<400> 204

```
Met Ala Asp Gly Ala Pro Arg Pro Gln Leu Tyr Arg Ser Val Ser Phe
 1               5                  10                  15
Lys Leu Leu Glu Arg Trp Ser Gly Gly Pro Gly Leu Arg Glu Glu Asp
            20                  25                  30
Thr Asp Thr Pro Gly Leu Arg Arg Arg Ala Ser Cys Arg Pro Thr Thr
        35                  40                  45
Ala Ala Arg Gly Gln Pro Ser Arg Arg Val Ser Lys Leu Ala Ser Gly
    50                  55                  60
Pro Leu Ala Ala Pro Ala Gln Pro Arg Pro Leu Arg Ser Leu Ser Pro
65                  70                  75                  80
Ser Val Arg Gln Leu Ser Arg Arg Phe Asp Ala Pro Arg Leu Asp Asp
                85                  90                  95
Gly Ser Ala Gly Thr Arg Asp Gly Gly Val Leu Pro Ala Ala Ala Glu
            100                 105                 110
Glu Ala Ala Glu Gly Pro Ala Arg Gly Ala Trp Pro Ser Val Thr Glu
        115                 120                 125
Met Arg Lys Leu Phe Gly Gly Pro Gly Ser Arg Arg Pro Ser Ala Asp
    130                 135                 140
Ser Glu Ser Pro Gly Thr Pro Ser Pro Asp Gly Ala Ala Trp Glu Pro
145                 150                 155                 160
Pro Ala Arg Glu Ser Arg Gln Pro Pro Thr Pro Pro Pro Arg Thr Cys
                165                 170                 175
Phe Pro Leu Ala Gly Leu Arg Ser Ala Arg Pro Leu Thr Gly Pro Glu
            180                 185                 190
Thr Glu Gly Arg Leu Arg Arg Pro Gln Gln Gln Gln Glu Arg Ala Gln
        195                 200                 205
Arg Pro Ala Asp Gly Leu His Ser Trp His Ile Phe Ser Gln Pro Gln
    210                 215                 220
Ala Gly Ala Arg Ala Ser Cys Ser Ser Ser Ser Ile Ala Ala Ser Tyr
225                 230                 235                 240
Pro Val Ser Arg Ser Arg Ala Ala Ser Ser Ser Glu Glu Glu Glu Glu
                245                 250                 255
Gly Pro Pro Gln Leu Pro Gly Ala Gln Ser Pro Ala Tyr His Gly Gly
            260                 265                 270
His Ser Ser Gly Ser Asp Asp Asp Arg Asp Gly Glu Gly Gly His Arg
        275                 280                 285
Trp Gly Gly Arg Pro Gly Leu Arg Pro Gly Ser Ser Leu Leu Asp Gln
    290                 295                 300
Asp Cys Arg Pro Asp Ser Asp Gly Leu Asn Leu Ser Ser Met Asn Ser
305                 310                 315                 320
Ala Gly Val Ser Gly Ser Pro Glu Pro Pro Thr Ser Pro Arg Ala Pro
                325                 330                 335
Arg Glu Glu Gly Leu Arg Glu Trp Gly Ser Gly Ser Pro Pro Cys Val
            340                 345                 350
Pro Gly Pro Gln Glu Gly Leu Arg Pro Met Ser Asp Ser Val Gly Gly
        355                 360                 365
Ala Phe Arg Val Ala Lys Val Ser Phe Pro Ser Tyr Leu Ala Ser Pro
    370                 375                 380
Ala Gly Ser Arg Gly Ser Ser Arg Tyr Ser Ser Thr Glu Thr Leu Lys
385                 390                 395                 400
Asp Asp Asp Leu Trp Ser Ser Arg Gly Ser Gly Gly Trp Gly Val Tyr
                405                 410                 415
Arg Ser Pro Ser Phe Gly Ala Gly Glu Gly Leu Leu Arg Ser Gln Ala
            420                 425                 430
Arg Thr Arg Ala Lys Gly Pro Gly Gly Thr Ser Arg Ala Leu Arg Asp
        435                 440                 445
```

```
Gly Gly Phe Glu Pro Glu Lys Ser Arg Gln Arg Lys Ser Leu Ser Asn
    450                 455                 460
Pro Asp Ile Ala Ser Glu Thr Leu Thr Leu Leu Ser Phe Leu Arg Ser
465                 470                 475                 480
Asp Leu Ser Glu Leu Arg Val Arg Lys Pro Gly Gly Ser Ser Gly Asp
                485                 490                 495
Arg Gly Ser Asn Pro Leu Asp Gly Arg Asp Ser Pro Ser Ala Gly Gly
            500                 505                 510
Pro Val Gly Gln Leu Glu Pro Ile Pro Ile Pro Ala Pro Ala Ser Pro
        515                 520                 525
Gly Thr Arg Pro Thr Leu Lys Asp Leu Thr Ala Thr Leu Arg Arg Ala
    530                 535                 540
Lys Ser Phe Thr Cys Ser Glu Lys Pro Met Ala Arg Arg Leu Pro Arg
545                 550                 555                 560
Thr Ser Ala Leu Lys Ser Ser Ser Ser Glu Leu Leu Leu Thr Gly Pro
                565                 570                 575
Gly Ala Glu Glu Asp Pro Leu Pro Leu Ile Val Gln Asp Gln Tyr Val
            580                 585                 590
Gln Glu Ala Arg Gln Val Phe Glu Lys Ile Gln Arg Met Gly Ala Gln
        595                 600                 605
Gln Asp Asp Gly Ser Asp Ala Pro Pro Gly Ser Pro Asp Trp Ala Gly
    610                 615                 620
Asp Val Thr Arg Gly Gln Arg Ser Gln Glu Glu Leu Ser Gly Pro Glu
625                 630                 635                 640
Ser Ser Leu Thr Asp Glu Gly Ile Gly Ala Asp Pro Glu Pro Pro Val
                645                 650                 655
Ala Ala Phe Cys Gly Leu Gly Thr Thr Gly Met Trp Arg Pro Leu Ser
            660                 665                 670
Ser Ser Ser Ala Gln Thr Asn His His Gly Pro Gly Thr Glu Asp Ser
        675                 680                 685
Leu Gly Gly Trp Ala Leu Val Ser Pro Glu Thr Pro Pro Thr Pro Gly
    690                 695                 700
Ala Leu Arg Arg Arg Arg Lys Val Pro Pro Ser Gly Ser Gly Gly Ser
705                 710                 715                 720
Glu Leu Ser Asn Gly Glu Ala Gly Glu Ala Tyr Arg Ser Leu Ser Asp
                725                 730                 735
Pro Ile Pro Gln Arg His Arg Ala Ala Thr Ser Glu Glu Pro Thr Gly
            740                 745                 750
Phe Ser Val Asp Ser Asn Leu Leu Gly Ser Leu Ser Pro Lys Thr Gly
        755                 760                 765
Leu Pro Ala Thr Ser Ala Met Asp Glu Gly Leu Thr Ser Gly His Ser
    770                 775                 780
Asp Trp Ser Val Gly Ser Glu Glu Ser Lys Gly Tyr Gln Glu Val Ile
785                 790                 795                 800
Gln Ser Ile Val Gln Gly Pro Gly Thr Leu Gly Arg Val Val Asp Asp
                805                 810                 815
Arg Ile Ala Gly Lys Ala Pro Lys Lys Lys Ser Leu Ser Asp Pro Ser
            820                 825                 830
Arg Arg Gly Glu Leu Ala Gly Pro Gly Phe Glu Gly Pro Gly Gly Glu
        835                 840                 845
Pro Ile Arg Glu Val Glu Pro Met Leu Pro Pro Ser Ser Ser Glu Pro
    850                 855                 860
Ile Leu Val Glu Gln Arg Ala Glu Pro Glu Glu Pro Gly Ala Thr Arg
865                 870                 875                 880
Ser Arg Ala Gln Ser Glu Arg Ala Leu Pro Glu Ala Leu Pro Pro Pro
                885                 890                 895
Ala Thr Ala His Arg Asn Phe His Leu Asp Pro Lys Leu Ala Asp Ile
            900                 905                 910
Leu Ser Pro Arg Leu Ile Arg Arg Gly Ser Lys Lys Arg Pro Ala Arg
        915                 920                 925
Ser Ser His Gln Glu Leu Arg Arg Asp Glu Gly Ser Gln Asp Gln Thr
```

930 935 940
Gly Ser Leu Ser Arg Ala Arg Pro Ser Ser Arg His Val Arg His Ala
945 950 955 960
Ser Val Pro Ala Thr Phe Met Pro Ile Val Val Pro Glu Pro Pro Thr
965 970 975
Ser Val Gly Pro Pro Val Ala Val Pro Glu Pro Ile Gly Phe Pro Thr
980 985 990
Arg Ala His Pro Thr Leu Gln Ala Pro Ser Leu Glu Asp Val Thr Lys
995 1000 1005
Gln Tyr Met Leu Asn Leu His Ser Gly Glu Val Pro Ala Pro Val Pro
1010 1015 1020
Val Asp Met Pro Cys Leu Pro Leu Ala Ala Pro Pro Ser Ala Glu Ala
1025 1030 1035 1040
Lys Pro Pro Glu Ala Ala Arg Pro Ala Asp Glu Pro Thr Pro Ala Ser
1045 1050 1055
Lys Cys Cys Ser Lys Pro Gln Val Asp Met Arg Lys His Val Ala Met
1060 1065 1070
Thr Leu Leu Asp Thr Glu Gln Ser Tyr Val Glu Ser Leu Arg Thr Leu
1075 1080 1085
Met Gln Gly Tyr Met Gln Pro Leu Lys Gln Pro Glu Asn Ser Val Leu
1090 1095 1100
Cys Asp Pro Ser Leu Val Asp Glu Ile Phe Asp Gln Ile Pro Glu Leu
1105 1110 1115 1120
Leu Glu His His Glu Gln Phe Leu Glu Gln Val Arg His Cys Met Gln
1125 1130 1135
Thr Trp His Ala Gln Gln Lys Val Gly Ala Leu Leu Val Gln Ser Phe
1140 1145 1150
Ser Lys Asp Val Leu Val Asn Ile Tyr Ser Ala Tyr Ile Asp Asn Phe
1155 1160 1165
Leu Asn Ala Lys Asp Ala Val Arg Val Ala Lys Glu Ala Arg Pro Ala
1170 1175 1180
Phe Leu Lys Phe Leu Glu Gln Ser Met Arg Glu Asn Lys Glu Lys Gln
1185 1190 1195 1200
Ala Leu Ser Asp Leu Met Ile Lys Pro Val Gln Arg Ile Pro Arg Tyr
1205 1210 1215
Glu Leu Leu Val Lys Asp Leu Leu Lys His Thr Pro Glu Asp His Pro
1220 1225 1230
Asp His Pro Leu Leu Leu Glu Ala Gln Arg Asn Ile Lys Gln Val Ala
1235 1240 1245
Glu Arg Ile Asn Lys Gly Val Arg Ser Ala Glu Glu Ala Glu Arg His
1250 1255 1260
Ala Arg Val Leu Gln Glu Ile Glu Ala His Ile Glu Gly Met Glu Asp
1265 1270 1275 1280
Leu Gln Ala Pro Leu Arg Arg Phe Leu Arg Gln Glu Met Val Ile Glu
1285 1290 1295
Val Lys Ala Ile Gly Gly Lys Lys Asp Arg Ser Leu Phe Leu Phe Thr
1300 1305 1310
Asp Leu Ile Val Cys Thr Thr Leu Lys Arg Lys Ser Gly Ser Leu Arg
1315 1320 1325
Arg Ser Ser Met Ser Leu Tyr Thr Ala Ala Ser Val Ile Asp Thr Ala
1330 1335 1340
Ser Lys Tyr Lys Met Leu Trp Lys Leu Pro Leu Glu Asp Ala Asp Ile
1345 1350 1355 1360
Ile Lys Gly Ala Ser Gln Ala Thr Asn Arg Glu Asn Ile Gln Lys Ala
1365 1370 1375
Ile Ser Arg Leu Asp Glu Asp Leu Thr Thr Leu Gly Gln Met Ser Lys
1380 1385 1390
Leu Ser Glu Ser Leu Gly Phe Pro His Gln Ser Leu Asp Asp Ala Leu
1395 1400 1405
Arg Asp Leu Ser Ala Ala Met His Arg Asp Leu Ser Glu Lys Gln Ala
1410 1415 1420

Leu Cys Tyr Ala Leu Ser Phe Pro Pro Thr Lys Leu Glu Leu Cys Ala
1425 1430 1435 1440
Thr Arg Pro Glu Gly Thr Asp Ser Tyr Ile Phe Glu Phe Pro His Pro
1445 1450 1455
Asp Ala Arg Leu Gly Phe Glu Gln Ala Phe Asp Glu Ala Lys Arg Lys
1460 1465 1470
Leu Ala Ser Ser Lys Ser Cys Leu Asp Pro Glu Phe Leu Lys Ala Ile
1475 1480 1485
Pro Ile Met Lys Thr Arg Ser Gly Met Gln Phe Ser Cys Ala Ala Pro
1490 1495 1500
Thr Leu Asn Ser Cys Pro Glu Pro Ser Pro Glu Val Trp Val Cys Asn
1505 1510 1515 1520
Ser Asp Gly Tyr Val Gly Gln Val Cys Leu Leu Ser Leu Arg Ala Glu
1525 1530 1535
Pro Asp Val Glu Ala Cys Ile Ala Val Cys Ser Ala Arg Ile Leu Cys
1540 1545 1550
Ile Gly Ala Val Pro Gly Leu Gln Pro Arg Cys His Arg Glu Pro Pro
1555 1560 1565
Pro Ser Leu Arg Ser Pro Pro Glu Thr Ala Pro Glu Pro Ala Gly Pro
1570 1575 1580
Glu Leu Asp Val Glu Ala Ala Ala Asp Glu Glu Ala Ala Thr Leu Ala
1585 1590 1595 1600
Glu Pro Gly Pro Gln Pro Cys Leu His Ile Ser Ile Ala Gly Ser Gly
1605 1610 1615
Leu Glu Met Thr Pro Gly Leu Gly Glu Gly Asp Pro Arg Pro Glu Leu
1620 1625 1630
Val Pro Phe Asp Ser Asp Ser Asp Asp Glu Ser Ser Pro Ser Pro Ser
1635 1640 1645
Gly Thr Leu Gln Ser Gln Ala Ser Arg Ser Thr Ile Ser Ser Ser Phe
1650 1655 1660
Gly Asn Glu Glu Thr Pro Ser Ser Lys Glu Ala Thr Ala Glu Thr Thr
1665 1670 1675 1680
Ser Ser Glu Glu Glu Gln Glu Pro Gly Phe Leu Pro Leu Ser Gly Ser
1685 1690 1695
Phe Gly Pro Gly Gly Pro Cys Gly Thr Ser Pro Met Asp Gly Arg Ala
1700 1705 1710
Leu Arg Arg Ser Ser His Gly Ser Phe Thr Arg Gly Ser Leu Glu Asp
1715 1720 1725
Leu Leu Ser Val Asp Pro Glu Ala Tyr Gln Ser Ser Val Trp Leu Gly
1730 1735 1740
Thr Glu Asp Gly Cys Val His Val Tyr Gln Ser Ser Asp Ser Ile Arg
1745 1750 1755 1760
Asp Arg Arg Asn Ser Met Lys Leu Gln His Ala Ala Ser Val Thr Cys
1765 1770 1775
Ile Leu Tyr Leu Asn Asn Gln Val Phe Val Ser Leu Ala Asn Gly Glu
1780 1785 1790
Leu Val Val Tyr Gln Arg Glu Ala Gly His Phe Trp Asp Pro Gln Asn
1795 1800 1805
Phe Lys Ser Val Thr Leu Gly Thr Gln Gly Ser Pro Ile Thr Lys Met
1810 1815 1820
Val Ser Val Gly Gly Arg Leu Trp Cys Gly Cys Gln Asn Arg Val Leu
1825 1830 1835 1840
Val Leu Ser Pro Asp Thr Leu Gln Leu Glu His Met Phe Tyr Val Gly
1845 1850 1855
Gln Asp Ser Ser Arg Cys Val Ala Cys Met Val Asp Ser Ser Leu Gly
1860 1865 1870
Val Trp Val Thr Leu Lys Gly Ser Ala His Val Cys Leu Tyr His Pro
1875 1880 1885
Asp Thr Phe Glu Gln Leu Ala Glu Val Asp Val Thr Pro Pro Val His
1890 1895 1900
Arg Met Leu Ala Gly Ser Asp Ala Ile Ile Arg Gln His Lys Ala Ala

```
1905                1910                1915                1920
Cys Leu Arg Ile Thr Ala Leu Leu Val Cys Glu Glu Leu Leu Trp Val
                1925                1930                1935
Gly Thr Ser Ala Gly Val Val Leu Thr Met Pro Thr Ser Pro Gly Thr
            1940                1945                1950
Val Ser Cys Pro Arg Ala Pro Leu Ser Pro Thr Gly Leu Gly Gln Gly
        1955                1960                1965
His Thr Gly His Val Arg Phe Leu Ala Ala Val Gln Leu Pro Asp Gly
    1970                1975                1980
Phe Asn Leu Leu Cys Pro Thr Pro Pro Pro Pro Pro Asp Thr Gly Pro
1985                1990                1995                2000
Glu Lys Leu Pro Ser Leu Glu His Arg Asp Ser Pro Trp His Arg Gly
                2005                2010                2015
Pro Ala Pro Ala Arg Pro Lys Met Leu Val Ile Ser Gly Gly Asp Gly
            2020                2025                2030
Tyr Glu Asp Phe Arg Leu Ser Ser Gly Gly Gly Ser Ser Ser Glu Thr
        2035                2040                2045
Val Gly Arg Asp Asp Ser Thr Asn His Leu Leu Leu Trp Arg Val
    2050                2055                2060
```

<210> 205
<211> 2247
<212> DNA
<213> Homo sapiens

<400> 205

```
ccggggcgga tggctccggc cgcctggctc cgcagcgcgg ccgcgcgcgc cctcctgccc      60
ccgatgctgc tgctgctgct ccagccgccg ccgctgctgg cccgggctct gccgccggac     120
gtccaccacc tccatgccga gaggaggggg ccacagccct ggcatgcagc cctgcccagt     180
agcccggcac ctgcccctgc cacgcaggaa gccccccggc ctgccagcag cctcaggcct     240
ccccgctgtg gcgtgcccga cccatctgat gggctgagtg cccgcaaccg acagaagagg     300
ttcgtgcttt ctggcgggcg ctgggagaag acggacctca cctacaggat ccttcggttc     360
ccatggcagt tggtgcagga gcaggtgcgg cagacgatgg cagaggccct aaaggtatgg     420
agcgatgtga cgccactcac ctttactgag gtgcacgagg gccgtgctga catcatgatc     480
gacttcgcca ggtactggca tggggacgac ctgccgtttg atgggcctgg gggcatcctg     540
gcccatgcct tcttccccaa gactcaccga gaaggggatg tccacttcga ctatgatgag     600
acctggacta tcggggatga ccagggcaca gacctgctgc aggtggcagc ccatgaattt     660
ggccacgtgc tggggctgca gcacacaaca gcagccaagg ccctgatgtc cgccttctac     720
acctttcgct acccactgag tctcagccca gatgactgca ggggcgttca acacctatat     780
ggccagccct ggcccactgt cacctccagg accccagccc tgggccccca ggctgggata     840
gacaccaatg agattgcacc gctggagcca gacgccccgc cagatgcctg tgaggcctcc     900
tttgacgcgg tctccaccat ccgaggcgag ctctttttct tcaaagcggg ctttgtgtgg     960
cgcctccgtg ggggccagct gcagcccggc tacccagcat tggcctctcg ccactggcag    1020
ggactgccca gccctgtgga cgctgccttc gaggatgccc agggccacat ttggttcttc    1080
caaggtgctc agtactgggt gtacgacggt gaaaagccag tcctgggccc cgcacccctc    1140
accgagctgg gcctggtgag gttcccggtc catgctgcct tggtctgggg tcccgagaag    1200
aacaagatct acttcttccg aggcagggac tactggcgtt tccaccccag cacccggcgt    1260
gtagacagtc ccgtgccccg cagggccact gactggagag gggtgccctc tgagatcgac    1320
gctgccttcc aggatgctga tggctatgcc tacttcctgc gcggccgcct ctactggaag    1380
tttgaccctg tgaaggtgaa ggctctggaa ggcttccccc gtctcgtggg tcctgacttc    1440
tttggctgtg ccgagcctgc caacactttc ctctgaccat ggcttggatg ccctcagggg    1500
tgctgacccc tgccaggcca cgaatatcag gctagagacc catggccatc tttgtggctg    1560
tgggcaccag gcatgggact gagcccatgt ctcctgcagg gggatggggt ggggtacaac    1620
caccatgaca actgccggga gggccacgca ggtcgtggtc acctgccagc gactgtctca    1680
gactgggcag ggaggctttg gcatgactta agaggaaggg cagtcttggg acccgctatg    1740
caggtcctgg caaacctggc tgccctgtct catccctgtc cctcagggta gcaccatggc    1800
aggactgggg gaactggagt gtccttgctg tatccctgtt gtgaggttcc ttccaggggc    1860
tggcactgaa gcaagggtgc tggggcccca tggccttcag ccctggctga gcaactgggc    1920
tgtagggcag ggccacttcc tgaggtcagg tcttggtagg tgcctgcatc tgtctgcctt    1980
ctggctgaca atcctggaaa tctgttctcc agaatccagg ccaaaaagtt cacagtcaaa    2040
tggggagggg tattcttcat gcaggagacc ccaggccctg gaggctgcaa catacctcaa    2100
```

tcctgtccca ggccggatcc tcctgaagcc cttttcgcag cactgctatc ctccaaagcc 2160
attgtaaatg tgtgtacagt gtgtataaac cttcttcttc ttttttttt ttaaactgag 2220
gattgtcatt aaacacagtt gttttct 2247

<210> 206
<211> 488
<212> PRT
<213> Homo sapiens

<400> 206

```
Met Ala Pro Ala Ala Trp Leu Arg Ser Ala Ala Ala Arg Ala Leu Leu
 1               5                  10                  15
Pro Pro Met Leu Leu Leu Leu Leu Gln Pro Pro Pro Leu Leu Ala Arg
            20                  25                  30
Ala Leu Pro Pro Asp Val His His Leu His Ala Glu Arg Arg Gly Pro
        35                  40                  45
Gln Pro Trp His Ala Ala Leu Pro Ser Ser Pro Ala Pro Ala Pro Ala
    50                  55                  60
Thr Gln Glu Ala Pro Arg Pro Ala Ser Ser Leu Arg Pro Pro Arg Cys
65                  70                  75                  80
Gly Val Pro Asp Pro Ser Asp Gly Leu Ser Ala Arg Asn Arg Gln Lys
                85                  90                  95
Arg Phe Val Leu Ser Gly Gly Arg Trp Glu Lys Thr Asp Leu Thr Tyr
            100                 105                 110
Arg Ile Leu Arg Phe Pro Trp Gln Leu Val Gln Glu Gln Val Arg Gln
        115                 120                 125
Thr Met Ala Glu Ala Leu Lys Val Trp Ser Asp Val Thr Pro Leu Thr
    130                 135                 140
Phe Thr Glu Val His Glu Gly Arg Ala Asp Ile Met Ile Asp Phe Ala
145                 150                 155                 160
Arg Tyr Trp His Gly Asp Asp Leu Pro Phe Asp Gly Pro Gly Gly Ile
                165                 170                 175
Leu Ala His Ala Phe Phe Pro Lys Thr His Arg Glu Gly Asp Val His
            180                 185                 190
Phe Asp Tyr Asp Glu Thr Trp Thr Ile Gly Asp Asp Gln Gly Thr Asp
        195                 200                 205
Leu Leu Gln Val Ala Ala His Glu Phe Gly His Val Leu Gly Leu Gln
    210                 215                 220
His Thr Thr Ala Ala Lys Ala Leu Met Ser Ala Phe Tyr Thr Phe Arg
225                 230                 235                 240
Tyr Pro Leu Ser Leu Ser Pro Asp Asp Cys Arg Gly Val Gln His Leu
                245                 250                 255
Tyr Gly Gln Pro Trp Pro Thr Val Thr Ser Arg Thr Pro Ala Leu Gly
            260                 265                 270
Pro Gln Ala Gly Ile Asp Thr Asn Glu Ile Ala Pro Leu Glu Pro Asp
        275                 280                 285
Ala Pro Pro Asp Ala Cys Glu Ala Ser Phe Asp Ala Val Ser Thr Ile
    290                 295                 300
Arg Gly Glu Leu Phe Phe Phe Lys Ala Gly Phe Val Trp Arg Leu Arg
305                 310                 315                 320
Gly Gly Gln Leu Gln Pro Gly Tyr Pro Ala Leu Ala Ser Arg His Trp
                325                 330                 335
Gln Gly Leu Pro Ser Pro Val Asp Ala Ala Phe Glu Asp Ala Gln Gly
            340                 345                 350
His Ile Trp Phe Phe Gln Gly Ala Gln Tyr Trp Val Tyr Asp Gly Glu
        355                 360                 365
Lys Pro Val Leu Gly Pro Ala Pro Leu Thr Glu Leu Gly Leu Val Arg
    370                 375                 380
Phe Pro Val His Ala Ala Leu Val Trp Gly Pro Glu Lys Asn Lys Ile
385                 390                 395                 400
Tyr Phe Phe Arg Gly Arg Asp Tyr Trp Arg Phe His Pro Ser Thr Arg
```

```
                405                 410                 415
Arg Val Asp Ser Pro Val Pro Arg Arg Ala Thr Asp Trp Arg Gly Val
            420                 425                 430
Pro Ser Glu Ile Asp Ala Ala Phe Gln Asp Ala Asp Gly Tyr Ala Tyr
        435                 440                 445
Phe Leu Arg Gly Arg Leu Tyr Trp Lys Phe Asp Pro Val Lys Val Lys
    450                 455                 460
Ala Leu Glu Gly Phe Pro Arg Leu Val Gly Pro Asp Phe Phe Gly Cys
465                 470                 475                 480
Ala Glu Pro Ala Asn Thr Phe Leu
                485
```

<210> 207
<211> 3074
<212> DNA
<213> Homo sapiens

<400> 207

```
ggcacgaggc tcaggcggtg gctggaggct gcgcatctgg ggctttaaac atacaaaggg      60
attgccagga cctgcggcgg cggcggcggc ggcgggggct ggggcgcggg ggccggacca     120
tgagccgctg agccgggcaa accccaggcc accgagccag cggaccctcg gagcgcagcc     180
ctgcgccgcg gagcaggctc caaccaggcg gcgacgcggc cacacgcacc gagccagcga     240
cccccgggcg acgcgcgggg ccagggagcg ctacgatgga ggcgctaatg gcccggggcg     300
cgctcacggg tcccctgagg gcgctctgtc tcctgggctg cctgctgagc cacgccgccg     360
ccgcgccgtc gcccatcatc aagttccccg gcgatgtcgc ccccaaaacg gacaaagagt     420
tggcagtgca atacctgaac accttctatg gctgccccaa ggagagctgc aacctgtttg     480
tgctgaagga cacactaaag aagatgcaga agttctttgg actgccccag acaggtgatc     540
ttgaccagaa taccatcgag accatgcgga agccacgctg cggcaaccca gatgtggcca     600
actacaactt cttccctcgc aagcccaagt gggacaagaa ccagatcaca tacaggatca     660
ttggctacac acctgatctg gacccagaga cagtggatga tgcctttgct cgtgccttcc     720
aagtctggag cgatgtgacc ccactgcggt tttctcgaat ccatgatgga gaggcagaca     780
tcatgatcaa ctttggccgc tgggagcatg gcgatggata ccccttgac ggtaaggacg      840
gactcctggc tcatgccttc gccccaggca ctggtgttgg gggagactcc cattttgatg     900
acgatgagct atggaccttg ggagaaggcc aagtggtccg tgtgaagtat ggcaacgccg     960
atggggagta ctgcaagttc cccttcttgt tcaatggcaa ggagtacaac agctgcactg    1020
ataccggccg cagcgatggc ttcctctggt gctccaccac ctacaacttt gagaaggatg    1080
gcaagtacgg cttctgtccc catgaagccc tgttcaccat gggcggcaac gctgaaggac    1140
agccctgcaa gtttccattc cgcttccagg gcacatccta tgacagctgc accactgagg    1200
gccgcacgga tggctaccgc tggtgcggca ccactgagga ctacgaccgc gacaagaagt    1260
atggcttctg ccctgagacc gccatgtcca ctgttggtgg gaactcagaa ggtgcccccc    1320
gtgtcttccc cttcactttc ctgggcaaca aatatgagag ctgcaccagc gccggccgca    1380
gtgacggaaa gatgtggtgt gcgaccacag ccaactacga tgacgaccgc aagtggggct    1440
tctgccctga ccaagggtac agcctgttcc tcgtggcagc ccacgagttt ggccacgcca    1500
tggggctgga gcactcccaa gaccctgggg ccctgatggc acccatttac acctacacca    1560
agaacttccg tctgtcccag gatgacatca agggcattca ggagctctat ggggcctctc    1620
ctgacattga ccttggcacc ggccccaccc ccacactggg ccctgtcact cctgagatct    1680
gcaaacagga cattgtattt gatggcatcg ctcagatccg tggtgagatc ttcttcttca    1740
aggaccggtt catttggcgg actgtgacgc cacgtgacaa gcccatgggg cccctgctgg    1800
tggccacatt ctggcctgag ctcccggaaa agattgatgc ggtatacgag gccccacagg    1860
aggagaaggc tgtgttcttt gcagggaatg aatactggat ctactcagcc agcaccctgg    1920
agcgagggta ccccaagcca ctgaccagcc tgggactgcc ccctgatgtc cagcgagtgg    1980
atgccgcctt taactggagc aaaaacaaga agacatacat ctttgctgga gacaaattct    2040
ggagatacaa tgaggtgaag aagaaaatgg atcctggctt tcccaagctc atcgcagatg    2100
cctggaatgc catccccgat aacctggatg ccgtcgtgga cctgcagggc ggcggtcaca    2160
gctacttctt caagggtgcc tattacctga agctggagaa ccaaagtctg aagagcgtga    2220
agtttggaag catcaaatcc gactggctag gctgctgagc tggccctggc tcccacaggc    2280
ccttcctctc cactgccttc gatacaccgg gcctggagaa ctagagaagg acccggaggg    2340
gcctggcagc cgtgccttca gctctacagc taatcagcat tctcactcct acctggtaat    2400
ttaagattcc agagagtggc tcctcccggt gcccaagaat agatgctgac tgtactcctc    2460
ccaggcgccc cttccccctc caatcccacc aaccctcaga gccacccctа aagagatcct    2520
ttgatatttt caacgcagcc ctgctttggg ctgccctggt gctgccacac ttcaggctct    2580
```

```
tctcctttca caaccttctg tggctcacag aacccttgga gccaatggag actgtctcaa    2640
gagggcactg gtggcccgac agcctggcac agggcagtgg gacagggcat ggccaggtgg    2700
ccactccaga cccctggctt ttcactgctg gctgccttag aacctttctt acattagcag    2760
tttgctttgt atgcactttg ttttttttctt tgggtcttgt ttttttttc cacttagaaa    2820
ttgcatttcc tgacagaagg actcaggttg tctgaagtca ctgcacagtg catctcagcc    2880
cacatagtga tggttcccct gttcactcta cttagcatgt ccctaccgag tctcttctcc    2940
actggatgga ggaaaaccaa gccgtggctt cccgctcagc cctccctgcc cctcccttca    3000
accattcccc atgggaaatg tcaacaagta tgaataaaga cacctactga gtgaaaaaaa    3060
aaaaaaaaaa aaaa                                                      3074
```

<210> 208
<211> 660
<212> PRT
<213> Homo sapiens

<400> 208

```
Met Glu Ala Leu Met Ala Arg Gly Ala Leu Thr Gly Pro Leu Arg Ala
 1               5                  10                  15
Leu Cys Leu Leu Gly Cys Leu Leu Ser His Ala Ala Ala Ala Pro Ser
            20                  25                  30
Pro Ile Ile Lys Phe Pro Gly Asp Val Ala Pro Lys Thr Asp Lys Glu
        35                  40                  45
Leu Ala Val Gln Tyr Leu Asn Thr Phe Tyr Gly Cys Pro Lys Glu Ser
    50                  55                  60
Cys Asn Leu Phe Val Leu Lys Asp Thr Leu Lys Lys Met Gln Lys Phe
65                  70                  75                  80
Phe Gly Leu Pro Gln Thr Gly Asp Leu Asp Gln Asn Thr Ile Glu Thr
                85                  90                  95
Met Arg Lys Pro Arg Cys Gly Asn Pro Asp Val Ala Asn Tyr Asn Phe
            100                 105                 110
Phe Pro Arg Lys Pro Lys Trp Asp Lys Asn Gln Ile Thr Tyr Arg Ile
        115                 120                 125
Ile Gly Tyr Thr Pro Asp Leu Asp Pro Glu Thr Val Asp Asp Ala Phe
    130                 135                 140
Ala Arg Ala Phe Gln Val Trp Ser Asp Val Thr Pro Leu Arg Phe Ser
145                 150                 155                 160
Arg Ile His Asp Gly Glu Ala Asp Ile Met Ile Asn Phe Gly Arg Trp
                165                 170                 175
Glu His Gly Asp Gly Tyr Pro Phe Asp Gly Lys Asp Gly Leu Leu Ala
            180                 185                 190
His Ala Phe Ala Pro Gly Thr Gly Val Gly Gly Asp Ser His Phe Asp
        195                 200                 205
Asp Asp Glu Leu Trp Thr Leu Gly Glu Gly Gln Val Val Arg Val Lys
    210                 215                 220
Tyr Gly Asn Ala Asp Gly Glu Tyr Cys Lys Phe Pro Phe Leu Phe Asn
225                 230                 235                 240
Gly Lys Glu Tyr Asn Ser Cys Thr Asp Thr Gly Arg Ser Asp Gly Phe
                245                 250                 255
Leu Trp Cys Ser Thr Thr Tyr Asn Phe Glu Lys Asp Gly Lys Tyr Gly
            260                 265                 270
Phe Cys Pro His Glu Ala Leu Phe Thr Met Gly Gly Asn Ala Glu Gly
        275                 280                 285
Gln Pro Cys Lys Phe Pro Phe Arg Phe Gln Gly Thr Ser Tyr Asp Ser
    290                 295                 300
Cys Thr Thr Glu Gly Arg Thr Asp Gly Tyr Arg Trp Cys Gly Thr Thr
305                 310                 315                 320
Glu Asp Tyr Asp Arg Asp Lys Lys Tyr Gly Phe Cys Pro Glu Thr Ala
                325                 330                 335
Met Ser Thr Val Gly Gly Asn Ser Glu Gly Ala Pro Cys Val Phe Pro
            340                 345                 350
Phe Thr Phe Leu Gly Asn Lys Tyr Glu Ser Cys Thr Ser Ala Gly Arg
```

```
        355                 360                 365
Ser Asp Gly Lys Met Trp Cys Ala Thr Thr Ala Asn Tyr Asp Asp Asp
    370                 375                 380
Arg Lys Trp Gly Phe Cys Pro Asp Gln Gly Tyr Ser Leu Phe Leu Val
385                 390                 395                 400
Ala Ala His Glu Phe Gly His Ala Met Gly Leu Glu His Ser Gln Asp
                405                 410                 415
Pro Gly Ala Leu Met Ala Pro Ile Tyr Thr Tyr Thr Lys Asn Phe Arg
            420                 425                 430
Leu Ser Gln Asp Asp Ile Lys Gly Ile Gln Glu Leu Tyr Gly Ala Ser
        435                 440                 445
Pro Asp Ile Asp Leu Gly Thr Gly Pro Thr Pro Thr Leu Gly Pro Val
    450                 455                 460
Thr Pro Glu Ile Cys Lys Gln Asp Ile Val Phe Asp Gly Ile Ala Gln
465                 470                 475                 480
Ile Arg Gly Glu Ile Phe Phe Phe Lys Asp Arg Phe Ile Trp Arg Thr
                485                 490                 495
Val Thr Pro Arg Asp Lys Pro Met Gly Pro Leu Leu Val Ala Thr Phe
            500                 505                 510
Trp Pro Glu Leu Pro Glu Lys Ile Asp Ala Val Tyr Glu Ala Pro Gln
        515                 520                 525
Glu Glu Lys Ala Val Phe Phe Ala Gly Asn Glu Tyr Trp Ile Tyr Ser
    530                 535                 540
Ala Ser Thr Leu Glu Arg Gly Tyr Pro Lys Pro Leu Thr Ser Leu Gly
545                 550                 555                 560
Leu Pro Pro Asp Val Gln Arg Val Asp Ala Ala Phe Asn Trp Ser Lys
                565                 570                 575
Asn Lys Lys Thr Tyr Ile Phe Ala Gly Asp Lys Phe Trp Arg Tyr Asn
            580                 585                 590
Glu Val Lys Lys Lys Met Asp Pro Gly Phe Pro Lys Leu Ile Ala Asp
        595                 600                 605
Ala Trp Asn Ala Ile Pro Asp Asn Leu Asp Ala Val Val Asp Leu Gln
    610                 615                 620
Gly Gly Gly His Ser Tyr Phe Phe Lys Gly Ala Tyr Tyr Leu Lys Leu
625                 630                 635                 640
Glu Asn Gln Ser Leu Lys Ser Val Lys Phe Gly Ser Ile Lys Ser Asp
                645                 650                 655
Trp Leu Gly Cys
            660
```

<210> 209
<211> 4160
<212> DNA
<213> Homo sapiens

<400> 209

```
ggggcggggc cggggcgggg cctgacttcc cgactgggag ccttagccgc ggggctgaga      60
ccaggcagcc tgcgttcgcc atgaagcgac ccaaggagcc gagcggctcc gacggggagt     120
ccgacggacc catcgacgtg ggccaagagg gccagctgag ccagatggcc aggccgctgt     180
ccacccccag ctcttcgcag atgcaagcca ggaagaaacg cagagggatc atagagaaac     240
ggcgtcgaga ccgcatcaac agtagccttt ctgaattgcg acgcttggtc cccactgcct     300
ttgagaaaca gggctcttcc aagctggaga aagccgaggt cttgcagatg acggtggatc     360
acttgaaaat gctccatgcc actggtggga caggattctt tgatgcccga gccctggcag     420
ttgacttccg gagcattggt tttcgggagt gcctcactga ggtcatcagg tacctggggg     480
tccttgaagg gcccagcagc cgtgcagacc ccgtccggat tcgccttctc tcccacctca     540
acagctacgc agccgagatg gagccttcgc ccacgcccac tggccctttg gccttccctg     600
cctggccctg gtctttcttc catagctgtc cagggctgcc agccctgagc aaccagctcg     660
ccatcctggg aagagtgccc agccctgtcc tccccggtgt ctcctctcct gcttacccca     720
tcccagccct ccgaaccgct ccccttcgca gagccacagg catcatcctg ccagcccgga     780
ggaatgtgct gcccagtcga ggggcatctt ccacccggag ggcccgcccc ctagagaggc     840
cagcgacccc tgtgcctgtc gcccccagca gcagggctgc caggagcagc cacatcgctc     900
```

ccctcctgca gtcttcctcc ccaacacccc ctggtcctac agggtcggct gcttacgtgg 960
ctgttcccac ccccaactca tcctccccag ggccagctgg gaggccagcg ggagccatgc 1020
tctaccactc ctgggtctct gaaatcactg aaatcggggc tttctgagct gcccccttcac 1080
caccccgccc caaggaataa ggaaggttct tttaccagga gcccaaaaaa gggcactgcc 1140
ttttctgctt tgcttcgtgg actggctcat atgtgaaggc acgttctcca gccatcagag 1200
gcccccctcct cctccaaccc atctctcctt ctcactgtta tcccagctta tccacccagc 1260
tctcctggag ctgttctggt ctcagaggct tggttccatt tctcacctga acagatgagt 1320
cctgggagag accctcagag atccgcccag acccctctcc tgccctctgc acaccagcag 1380
caggcatgaa ccttgggtct gggaaaaagc tttaacctgc agggcaccag gacccaaggc 1440
aggctgttcc ttggggcggt cagaccccag tcaggagcaa tgactgactg gctgcagcct 1500
tcccacgcca agaggctgga acatagtgtc tgcctcgctt cctggagata gtaactgagc 1560
aggggctaca aagaggtctc ctgggaaccc tgtctgcccc ttcccacctg tccttgggcc 1620
acaccatcac actgaaccac aggacagacc ctttctccac cacagccaag gcctggagac 1680
tgggggccca gcagagcctg ctcccaccct cctcccagca gcagacaccc accctctcac 1740
tgactaacag gtccctgcac acagctggcc tggtaaaccc agctgggagg tttctaggca 1800
gcagcaaaac tctgtgacag ggtgtcctca caccaggcct tggacagctc tcccagacag 1860
gagccagggt tgagcaatgg agagcccagc ccccacgtct tacagtcgcc atcctccagg 1920
cgtgtggtcc ctccccattg ggtgcacagt gcagaggggc cgtggcccca tgtgatggtg 1980
cgcagagagg aacctcttgg gattcagcac cagacgtctg tgctgcctgg tttgcatccg 2040
gctcacagag cccagactgc tggaacagcc aaggactgtc aggctggaca aaaataactg 2100
caaggagggg caagagaaag gatgattcga ggcaccttgg cccttcaagg tcatgcagtg 2160
ggtcgagcgc ctgagatcct gttcaccagg actccacaga gctggctctg ctcagaagcc 2220
atttcattcc ccggctccac cctaggccac tttttctaac agaggaaaca aatggtccag 2280
cagtcgttcc cagcagaaca gcggagcctg gactgacacc cagtgggacc agtgttgcca 2340
caccagttga taaaatgcag aaacccttct gtactcgttg gtaaatatct actcccccaa 2400
gtgactccag gtgccccccа ccgcctggca cttcccccag gactcctacg atctggttac 2460
tgcctggccg atccaaggct gtggagtccc agagccagca gttcactggt gctcattcca 2520
cactggttag atacttcagt tgtcacccct gggaagattc tcccacctcc tccctttgat 2580
ggaaccaccc tccccagagg ctgcattgag gagactccac agactgaaaa gtgagtttgc 2640
agaaaccttg gggaaaaggg ccctttcaaa gaagtggata agagggagga gatcattgag 2700
tgacccagaa agctcttttg aaaagacaga ctcctcaagg agagataaag aggaaagcac 2760
ctctttcatt ttttagtgtg agctaattcc atcagactgc tgtcctcctg gacccatctg 2820
agatgtgcag tagcaaggag agggggggatc attttagaga gtgggtcatt ggcagggagt 2880
gctccggagg gaggcagagg ggagactgtg gtagaaggaa gacagaactc acacatgctc 2940
ccaggattgg ggacagggac agaggaggta acagaaggca aaggccagtt tccccgttat 3000
catgaagggg cccactcagg acaggaacaa ggacaactcc tcctcctcct cctcctctcc 3060
tgctgctcct gggataccag gtcagtgatg tagtcttgca gtttggcaac ttcctagcct 3120
gagaatccct agtggggctg tgggaaacac atttccacgt tgcaagcatg caactccaaa 3180
gaatctgtga tgccactgaa atgagatggg aatgatccag ctctttcagc atcttggttg 3240
aacttgcttt cattgtccct gggatattgt ggaaggaaag gtgactgtgt gatctgattc 3300
tgtggtcaag gacttgcatc ttgtgtttct atccccaagc cttcctggtg tctccaactc 3360
ctaccccatt gcatgggttg ttgcggacat ccaataaaga ttttttagt gcttctggaa 3420
acttccagta gattctactt ctaaactatc tctggagtcc atccacttct gtctgcaccc 3480
acagccatcc tggccaggcc acatcacctc ccccagatca ctgccctggc ctcagaaagg 3540
tcttccctct tgctttgtca atcagttctc agtagcagca gagagaaatt gaaagctgca 3600
ggtcatatcg tatcatcttt agtttgaaaa cctcactctc ttaccctatt gttctaaagg 3660
tcttcttttg gtcccaacct cacttccagc ctcatttctt gccagtccca gacttgctcc 3720
ctgagcttct gccacctgcc cttccttcat ttcctcgaca ttccagcctt gttcccacct 3780
ccagcacttt gcatatgctg ttccctttgc caagaatgct cttcccctac cctgtgcatg 3840
gctgagttct gcagaccctc aggccttggc ttcaacgttg cctcgtccaa gaggccttcc 3900
tcgactactt tacttgtgga gttcctctat cacaaggcct ctgttctttc ccttcatgga 3960
gaatttgcca ctgcatatcc atttgtgtaa tttacttgtt ggttgactgt gcctcccact 4020
cgagtgtaag ctcatgaggc caggtgccat gcctggttca gtctccactc tgtacccagc 4080
attgagcaca gggcctggtc catagttggc gttcaataaa tacttgttga agaagtgaaa 4140
aaaaaaaaaa aaaaaaaaaa 4160

<210> 210
<211> 328
<212> PRT
<213> Homo sapiens

<400> 210

```
Met Lys Arg Pro Lys Glu Pro Ser Gly Ser Asp Gly Glu Ser Asp Gly
 1               5                  10                  15
Pro Ile Asp Val Gly Gln Glu Gly Gln Leu Ser Gln Met Ala Arg Pro
            20                  25                  30
Leu Ser Thr Pro Ser Ser Ser Gln Met Gln Ala Arg Lys Lys Arg Arg
        35                  40                  45
Gly Ile Ile Glu Lys Arg Arg Arg Asp Arg Ile Asn Ser Ser Leu Ser
    50                  55                  60
Glu Leu Arg Arg Leu Val Pro Thr Ala Phe Glu Lys Gln Gly Ser Ser
65                  70                  75                  80
Lys Leu Glu Lys Ala Glu Val Leu Gln Met Thr Val Asp His Leu Lys
                85                  90                  95
Met Leu His Ala Thr Gly Gly Thr Gly Phe Phe Asp Ala Arg Ala Leu
            100                 105                 110
Ala Val Asp Phe Arg Ser Ile Gly Phe Arg Glu Cys Leu Thr Glu Val
        115                 120                 125
Ile Arg Tyr Leu Gly Val Leu Glu Gly Pro Ser Ser Arg Ala Asp Pro
    130                 135                 140
Val Arg Ile Arg Leu Leu Ser His Leu Asn Ser Tyr Ala Ala Glu Met
145                 150                 155                 160
Glu Pro Ser Pro Thr Pro Thr Gly Pro Leu Ala Phe Pro Ala Trp Pro
                165                 170                 175
Trp Ser Phe Phe His Ser Cys Pro Gly Leu Pro Ala Leu Ser Asn Gln
            180                 185                 190
Leu Ala Ile Leu Gly Arg Val Pro Ser Pro Val Leu Pro Gly Val Ser
        195                 200                 205
Ser Pro Ala Tyr Pro Ile Pro Ala Leu Arg Thr Ala Pro Leu Arg Arg
    210                 215                 220
Ala Thr Gly Ile Ile Leu Pro Ala Arg Arg Asn Val Leu Pro Ser Arg
225                 230                 235                 240
Gly Ala Ser Ser Thr Arg Arg Ala Arg Pro Leu Glu Arg Pro Ala Thr
                245                 250                 255
Pro Val Pro Val Ala Pro Ser Ser Arg Ala Ala Arg Ser Ser His Ile
            260                 265                 270
Ala Pro Leu Leu Gln Ser Ser Ser Pro Thr Pro Pro Gly Pro Thr Gly
        275                 280                 285
Ser Ala Ala Tyr Val Ala Val Pro Thr Pro Asn Ser Ser Ser Pro Gly
    290                 295                 300
Pro Ala Gly Arg Pro Ala Gly Ala Met Leu Tyr His Ser Trp Val Ser
305                 310                 315                 320
Glu Ile Thr Glu Ile Gly Ala Phe
                325
```

<210> 211
<211> 5680
<212> DNA
<213> Homo sapiens

<400> 211

```
gggcgatggg ttgatgggcg ccgggggacg caggatgcgg ggggcgcccg cgcgcctgct     60
gctgccgctg ctgccgtggc tcctgctgct cctggcgccc gaggctcggg gcgcgcccgg    120
ctgcccgcta tccatccgca gctgcaagtg ctcgggggag cggcccaagg ggctgagcgg    180
cggcgtccct ggcccggctc ggcggagggt ggtgtgcagc ggcggggacc tcccggagcc    240
tcccgagccc ggccttctgc ctaacggcac cgttaccctg ctcttgagca ataacaagat    300
cacgggctc cgcaatggct ccttcctggg actgtcactg ctggagaagc tggacctgag    360
gaacaacatc atcagcacag tgcagccggg cgccttcctg ggcctggggg agctgaagcg    420
tttagatctc tccaacaacc ggattggctg tctcacctcc gagaccttcc agggcctccc    480
caggcttctc cgactaaaca tatctggaaa catcttctcc agtctgcaac ctggggtctt    540
tgatgagctg ccagccctta aggttgtgga cttgggcacc gagttcctga cctgtgactg    600
ccacctgcgc tggctgctgc cctgggccca gaatcgctcc ctgcagctgt cggaacacac    660
```

gctctgtgct taccccagtg ccctgcatgc tcaggccctg ggcagcctcc aggaggccca 720
gctctgctgc gaggggccc tggagctgca cacacaccac ctcatcccgt ccctacgcca 780
agtggtgttc caggggatc ggctgccctt ccagtgctct gccagctacc tgggcaacga 840
cacccgcatc cgctggtacc acaaccgagc ccctgtggag ggtgatgagc aggcgggcat 900
cctcctggcc gagagcctca tccacgactg caccttcatc accagtgagc tgacgctgtc 960
tcacatcggc gtgtgggcct caggcgagtg ggagtgcacc gtgtccatgg cccaaggcaa 1020
cgccagcaag aaggtggaga tcgtggtgct ggagacctct gcctcctact gccccgccga 1080
gcgtgttgcc aacaaccgcg gggacttcag gtggccccga actctggctg gcatcacagc 1140
ctaccagtcc tgcctgcagt atcccttcac ctcagtgccc ctgggcgggg gtgccccggg 1200
cacccgagcc tcccgccggt gtgaccgtgc cggccgctgg gagccagggg actactccca 1260
ctgtctctac accaacgaca tcaccagggt gctgtacacc ttcgtgctga tgcccatcaa 1320
tgcctccaat gcgctgaccc tggctcacca gctgcgcgtg tacacagccg aggccgctag 1380
cttttcagac atgatggatg tagtctatgt ggctcagatg atccagaaat ttttgggtta 1440
tgtcgaccag atcaaagagc tggtagaggt gatggtggac atggccagca acctgatgct 1500
ggtggacgag cacctgctgt ggctggccca gcgcgaggac aaggcctgca gccgcatcgt 1560
gggtgccctg gagcgcattg gggggccgc cctcagcccc catgcccagc acatctcagt 1620
gaatgcgagg aacgtggcat tggaggccta cctcatcaag ccgcacagct acgtgggcct 1680
gacctgcaca gccttccaga ggagggaggg aggggtgccg ggcacacggc caggaagccc 1740
tggccagaac cccccacctg agcccgagcc cccagctgac cagcagctcc gcttccgctg 1800
caccaccggg aggcccaatg tttctctgtc gtccttccac atcaagaaca gcgtggccct 1860
ggcctccatc cagctgcccc cgagtctatt ctcatccctt ccggctgccc tggctccccc 1920
ggtgccccca gactgcaccc tgcaactgct cgtcttccga aatggccgcc tcttccacag 1980
ccacagcaac acctcccgcc ctggagctgc tgggcctggc aagaggcgtg gcgtggccac 2040
ccccgtcatc ttcgcaggaa ccagtggctg tggcgtggga aacctgacag agccagtggc 2100
cgtttcgctg cggcactggg ctgagggagc cgaacctgtg gccgcttggt ggagccagga 2160
ggggcccggg gaggctgggg gctggacctc ggagggctgc cagctccgct ccagccagcc 2220
caatgtcagc gccctgcact gccagcactt gggcaatgtg gccgtgctca tggagctgag 2280
cgcctttccc agggaggtgg ggggcgccgg ggcagggctg caccccgtgg tatacccctg 2340
cacggccttg ctgctgctct gcctcttcgc caccatcatc acctacatcc tcaaccacag 2400
ctccatccgt gtgtcccgga aaggctggca catgctgctg aacttgtgct tccacatagc 2460
catgacctct gctgtctttg cgggggggcat cacactcacc aactaccaga tggtctgcca 2520
ggcggtgggc atcaccctgc actactcctc cctatccacg ctgctctgga tgggcgtgaa 2580
ggcgcgagtg ctccataagg agctcacctg gagggcaccc cctccgcaag aaggggaccc 2640
cgctctgcct actcccagtc ctatgctccg gttctatttg atcgctggag ggattccact 2700
cattatctgt ggcatcacag ctgcagtcaa catccacaac taccgggacc acagccccta 2760
ctgctggctg gtgtggcgtc caagccttgg cgccttctac atccctgtgg ctttgattct 2820
gctcatcacc tggatctatt tcctgtgcgc cgggctacgc ttacggggtc ctctggcaca 2880
gaaccccaag gcgggcaaca gcagggcctc cctggaggca ggggaggagc tgaggggttc 2940
caccaggctc aggggcagcg gccccctcct gagtgactca ggttcccttc ttgctactgg 3000
gagcgcgcga gtggggacgc ccgggccccc ggaggatggt gacagcctct attctccggg 3060
agtccagcta ggggcgctgg tgaccacgca cttcctgtac ttggccatgt gggcctgcgg 3120
ggctctggca gtgtcccagc gctggctgcc ccgggtggtg tgcagctgct tgtacggggt 3180
ggcagcctcc gccctgggcc tcttcgtctt cactcaccac tgtgccaggc ggagggacgt 3240
gagagcctcg tggcgcgcct gctgcccccc tgcctctccc gcggcccccc atgccccgcc 3300
ccgggccctg cccgccgccg cagaggacgg ttccccggtg ttcggggagg ggccccccctc 3360
cctcaagtcc tccccaagcg gcagcagcgg ccatccgctg gctctgggcc cctgcaagct 3420
caccaacctg cagctggccc agagtcaggt gtgcgaggcg ggggcggcgg ccggcgggga 3480
aggagagccg gagccggcgg gcacccgggg aaacctcgcc caccgccacc ccaacaacgt 3540
gcaccacggg cgtcgggcgc acaagagccg ggccaaggga caccgcgcgg gggaggcctg 3600
cggcaagaac cggctcaagg ccctgcgcgg gggcgcggcg ggggcgctgg agctgctgtc 3660
cagcgagagc ggtagtctgc acaacagccc caccgacagc tacctgggca gcagccgcaa 3720
cagcccgggc gccggcctgc agctggaagg cgagcccatg ctcacgccgt ccgagggcag 3780
cgacaccagc gccgcgccgc tttctgaggc gggccgggca ggccagcgcc gcagcgccag 3840
ccgcgacagt ctcaagggcg gcggcgcgct ggagaaggag agccatcgcc gctcgtaccc 3900
gctcaacgcc gccagcctaa acggcgcccc caaggggggc aagtacgacg acgtcaccct 3960
gatgggcgcg gaggtagcca gcggcggctg catgaagacc ggactctgga agagcgaaac 4020
taccgtctaa ggtggggcgg gcgacgcggt agacgggctg gccacgcggc tcgttccccc 4080
gctcctcggg gccctccaag gtgtctccgt agtcagcagg ttggaggcag aggagccgat 4140
ggctggagga agcccacagg cggatgttcc ccacttgcct agagggcatc cctctggggt 4200
agcgacagac aatcccagaa acacgcataa tacatttccg tccagcccgg ggcagtctga 4260
ctgtcggtgc cctcccagga acggggaagg cctccgtctg tgtgaaaggg cacagcacat 4320

cccaggtgca ccctccccaa gtactcccac cccgcctact gtccatgcgg cctcactggg 4380
ggccatcagc ctcaccagca aagcagagat gagagcgtgg gaactgtgtt ctttcctccc 4440
tgccctctac tgatttcagc ccagcccctg cctagatcct aggtcccttt tcctcccgag 4500
tttggctggc acgagagcta gcccagcaca tgaagcaggt gatgttaagt cacaaggtgc 4560
tgcttttcag atccactatg caagagggga gggtggggcc acgtgaaagg cagctctaga 4620
catcaaccag tcctgggggga ggggagtggg aaccgggcac aactaggaac aatgccacca 4680
ttcccacagg agtggtactt aaaccagaca gcagggttca gaggtggcac accgggacaa 4740
agctgaggcc ctgcacctca acagctgact gccaggtgcc tgtgggtgaa ctgaggggag 4800
tagagggaga gggcaggtgg aactggggca gaatctagtc atgccctaaa gctagtcctg 4860
taaacaatgg tgccccagaa agctgcaggt ggtgtttgga gaagcagtta cttttcagtt 4920
acaagaccca tctccctagt ctcagcctta caacaccacg ggactaagga agagcacttc 4980
cttgcctccg taaggccaga ggaagaacca tcccaatcat ttgatctcca gctccacagt 5040
agagagaaac ctacaaaatg tcaaaccagc ttcccgactc ccaggagctc aagccaagcc 5100
cagaggcagt ggctggggtc cctgcaggtc atgaggggcc tatgccttta ctccttttaa 5160
acaccagcac ccgtcttttc cccaacctaa aaccaaccac cagcatttca ctacaggacc 5220
aaatggaaac cgagggaacc ctgggtcttg ggaagaacaa caggaaacca aggtctgacc 5280
tagggttccc tcccagtctt cacatcactc tggcctcatc accaaggtga cagaggacac 5340
aggggagggg gaaaacccac acacactcct tggaatgggt cctgttattt atgcttgctg 5400
cacagacata ttagaagaaa aaaaaaagct ttgtattatt cttccacata tgctggctgc 5460
tgtttacaca ccctgccaat gccttagcac tggagagctt tttgcaatat gctggggaaa 5520
ggggagggag ggaatgaaag tgccaaagaa aacatgtttt taagaactcg ggttttatac 5580
aatagaatgt tttctagcag atgcctcttg ttttaatata ttaaaatttt gcaaagccct 5640
ttgagctaca aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 5680

<210> 212
<211> 1331
<212> PRT
<213> Homo sapiens

<400> 212
Met Arg Gly Ala Pro Ala Arg Leu Leu Leu Pro Leu Leu Pro Trp Leu
1 5 10 15
Leu Leu Leu Leu Ala Pro Glu Ala Arg Gly Ala Pro Gly Cys Pro Leu
20 25 30
Ser Ile Arg Ser Cys Lys Cys Ser Gly Glu Arg Pro Lys Gly Leu Ser
35 40 45
Gly Gly Val Pro Gly Pro Ala Arg Arg Arg Val Val Cys Ser Gly Gly
50 55 60
Asp Leu Pro Glu Pro Pro Glu Pro Gly Leu Leu Pro Asn Gly Thr Val
65 70 75 80
Thr Leu Leu Leu Ser Asn Asn Lys Ile Thr Gly Leu Arg Asn Gly Ser
85 90 95
Phe Leu Gly Leu Ser Leu Leu Glu Lys Leu Asp Leu Arg Asn Asn Ile
100 105 110
Ile Ser Thr Val Gln Pro Gly Ala Phe Leu Gly Leu Gly Glu Leu Lys
115 120 125
Arg Leu Asp Leu Ser Asn Asn Arg Ile Gly Cys Leu Thr Ser Glu Thr
130 135 140
Phe Gln Gly Leu Pro Arg Leu Leu Arg Leu Asn Ile Ser Gly Asn Ile
145 150 155 160
Phe Ser Ser Leu Gln Pro Gly Val Phe Asp Glu Leu Pro Ala Leu Lys
165 170 175
Val Val Asp Leu Gly Thr Glu Phe Leu Thr Cys Asp Cys His Leu Arg
180 185 190
Trp Leu Leu Pro Trp Ala Gln Asn Arg Ser Leu Gln Leu Ser Glu His
195 200 205
Thr Leu Cys Ala Tyr Pro Ser Ala Leu His Ala Gln Ala Leu Gly Ser
210 215 220
Leu Gln Glu Ala Gln Leu Cys Cys Glu Gly Ala Leu Glu Leu His Thr

```
225                 230                 235                 240
His His Leu Ile Pro Ser Leu Arg Gln Val Val Phe Gln Gly Asp Arg
                245                 250                 255
Leu Pro Phe Gln Cys Ser Ala Ser Tyr Leu Gly Asn Asp Thr Arg Ile
            260                 265                 270
Arg Trp Tyr His Asn Arg Ala Pro Val Glu Gly Asp Glu Gln Ala Gly
        275                 280                 285
Ile Leu Leu Ala Glu Ser Leu Ile His Asp Cys Thr Phe Ile Thr Ser
    290                 295                 300
Glu Leu Thr Leu Ser His Ile Gly Val Trp Ala Ser Gly Glu Trp Glu
305                 310                 315                 320
Cys Thr Val Ser Met Ala Gln Gly Asn Ala Ser Lys Lys Val Glu Ile
                325                 330                 335
Val Val Leu Glu Thr Ser Ala Ser Tyr Cys Pro Ala Glu Arg Val Ala
            340                 345                 350
Asn Asn Arg Gly Asp Phe Arg Trp Pro Arg Thr Leu Ala Gly Ile Thr
        355                 360                 365
Ala Tyr Gln Ser Cys Leu Gln Tyr Pro Phe Thr Ser Val Pro Leu Gly
    370                 375                 380
Gly Gly Ala Pro Gly Thr Arg Ala Ser Arg Arg Cys Asp Arg Ala Gly
385                 390                 395                 400
Arg Trp Glu Pro Gly Asp Tyr Ser His Cys Leu Tyr Thr Asn Asp Ile
                405                 410                 415
Thr Arg Val Leu Tyr Thr Phe Val Leu Met Pro Ile Asn Ala Ser Asn
            420                 425                 430
Ala Leu Thr Leu Ala His Gln Leu Arg Val Tyr Thr Ala Glu Ala Ala
        435                 440                 445
Ser Phe Ser Asp Met Met Asp Val Val Tyr Val Ala Gln Met Ile Gln
    450                 455                 460
Lys Phe Leu Gly Tyr Val Asp Gln Ile Lys Glu Leu Val Glu Val Met
465                 470                 475                 480
Val Asp Met Ala Ser Asn Leu Met Leu Val Asp Glu His Leu Leu Trp
                485                 490                 495
Leu Ala Gln Arg Glu Asp Lys Ala Cys Ser Arg Ile Val Gly Ala Leu
            500                 505                 510
Glu Arg Ile Gly Gly Ala Ala Leu Ser Pro His Ala Gln His Ile Ser
        515                 520                 525
Val Asn Ala Arg Asn Val Ala Leu Glu Ala Tyr Leu Ile Lys Pro His
    530                 535                 540
Ser Tyr Val Gly Leu Thr Cys Thr Ala Phe Gln Arg Arg Glu Gly Gly
545                 550                 555                 560
Val Pro Gly Thr Arg Pro Gly Ser Pro Gly Gln Asn Pro Pro Pro Glu
                565                 570                 575
Pro Glu Pro Pro Ala Asp Gln Gln Leu Arg Phe Arg Cys Thr Thr Gly
            580                 585                 590
Arg Pro Asn Val Ser Leu Ser Ser Phe His Ile Lys Asn Ser Val Ala
        595                 600                 605
Leu Ala Ser Ile Gln Leu Pro Pro Ser Leu Phe Ser Ser Leu Pro Ala
    610                 615                 620
Ala Leu Ala Pro Pro Val Pro Pro Asp Cys Thr Leu Gln Leu Leu Val
625                 630                 635                 640
Phe Arg Asn Gly Arg Leu Phe His Ser His Ser Asn Thr Ser Arg Pro
                645                 650                 655
Gly Ala Ala Gly Pro Gly Lys Arg Arg Gly Val Ala Thr Pro Val Ile
            660                 665                 670
Phe Ala Gly Thr Ser Gly Cys Gly Val Gly Asn Leu Thr Glu Pro Val
        675                 680                 685
Ala Val Ser Leu Arg His Trp Ala Glu Gly Ala Glu Pro Val Ala Ala
    690                 695                 700
Trp Trp Ser Gln Glu Gly Pro Gly Glu Ala Gly Gly Trp Thr Ser Glu
705                 710                 715                 720
```

Gly Cys Gln Leu Arg Ser Ser Gln Pro Asn Val Ser Ala Leu His Cys
725 730 735
Gln His Leu Gly Asn Val Ala Val Leu Met Glu Leu Ser Ala Phe Pro
740 745 750
Arg Glu Val Gly Gly Ala Gly Ala Gly Leu His Pro Val Val Tyr Pro
755 760 765
Cys Thr Ala Leu Leu Leu Leu Cys Leu Phe Ala Thr Ile Ile Thr Tyr
770 775 780
Ile Leu Asn His Ser Ser Ile Arg Val Ser Arg Lys Gly Trp His Met
785 790 795 800
Leu Leu Asn Leu Cys Phe His Ile Ala Met Thr Ser Ala Val Phe Ala
805 810 815
Gly Gly Ile Thr Leu Thr Asn Tyr Gln Met Val Cys Gln Ala Val Gly
820 825 830
Ile Thr Leu His Tyr Ser Ser Leu Ser Thr Leu Leu Trp Met Gly Val
835 840 845
Lys Ala Arg Val Leu His Lys Glu Leu Thr Trp Arg Ala Pro Pro Pro
850 855 860
Gln Glu Gly Asp Pro Ala Leu Pro Thr Pro Ser Pro Met Leu Arg Phe
865 870 875 880
Tyr Leu Ile Ala Gly Gly Ile Pro Leu Ile Ile Cys Gly Ile Thr Ala
885 890 895
Ala Val Asn Ile His Asn Tyr Arg Asp His Ser Pro Tyr Cys Trp Leu
900 905 910
Val Trp Arg Pro Ser Leu Gly Ala Phe Tyr Ile Pro Val Ala Leu Ile
915 920 925
Leu Leu Ile Thr Trp Ile Tyr Phe Leu Cys Ala Gly Leu Arg Leu Arg
930 935 940
Gly Pro Leu Ala Gln Asn Pro Lys Ala Gly Asn Ser Arg Ala Ser Leu
945 950 955 960
Glu Ala Gly Glu Glu Leu Arg Gly Ser Thr Arg Leu Arg Gly Ser Gly
965 970 975
Pro Leu Leu Ser Asp Ser Gly Ser Leu Leu Ala Thr Gly Ser Ala Arg
980 985 990
Val Gly Thr Pro Gly Pro Pro Glu Asp Gly Asp Ser Leu Tyr Ser Pro
995 1000 1005
Gly Val Gln Leu Gly Ala Leu Val Thr Thr His Phe Leu Tyr Leu Ala
1010 1015 1020
Met Trp Ala Cys Gly Ala Leu Ala Val Ser Gln Arg Trp Leu Pro Arg
1025 1030 1035 1040
Val Val Cys Ser Cys Leu Tyr Gly Val Ala Ala Ser Ala Leu Gly Leu
1045 1050 1055
Phe Val Phe Thr His His Cys Ala Arg Arg Arg Asp Val Arg Ala Ser
1060 1065 1070
Trp Arg Ala Cys Cys Pro Pro Ala Ser Pro Ala Ala Pro His Ala Pro
1075 1080 1085
Pro Arg Ala Leu Pro Ala Ala Ala Glu Asp Gly Ser Pro Val Phe Gly
1090 1095 1100
Glu Gly Pro Pro Ser Leu Lys Ser Ser Pro Ser Gly Ser Ser Gly His
1105 1110 1115 1120
Pro Leu Ala Leu Gly Pro Cys Lys Leu Thr Asn Leu Gln Leu Ala Gln
1125 1130 1135
Ser Gln Val Cys Glu Ala Gly Ala Ala Ala Gly Gly Glu Gly Glu Pro
1140 1145 1150
Glu Pro Ala Gly Thr Arg Gly Asn Leu Ala His Arg His Pro Asn Asn
1155 1160 1165
Val His His Gly Arg Arg Ala His Lys Ser Arg Ala Lys Gly His Arg
1170 1175 1180
Ala Gly Glu Ala Cys Gly Lys Asn Arg Leu Lys Ala Leu Arg Gly Gly
1185 1190 1195 1200
Ala Ala Gly Ala Leu Glu Leu Leu Ser Ser Glu Ser Gly Ser Leu His

```
                1205                1210                1215
Asn Ser Pro Thr Asp Ser Tyr Leu Gly Ser Ser Arg Asn Ser Pro Gly
            1220                1225                1230
Ala Gly Leu Gln Leu Glu Gly Glu Pro Met Leu Thr Pro Ser Glu Gly
        1235                1240                1245
Ser Asp Thr Ser Ala Ala Pro Leu Ser Glu Ala Gly Arg Ala Gly Gln
    1250                1255                1260
Arg Arg Ser Ala Ser Arg Asp Ser Leu Lys Gly Gly Gly Ala Leu Glu
1265                1270                1275                1280
Lys Glu Ser His Arg Arg Ser Tyr Pro Leu Asn Ala Ala Ser Leu Asn
                1285                1290                1295
Gly Ala Pro Lys Gly Gly Lys Tyr Asp Asp Val Thr Leu Met Gly Ala
            1300                1305                1310
Glu Val Ala Ser Gly Gly Cys Met Lys Thr Gly Leu Trp Lys Ser Glu
        1315                1320                1325
Thr Thr Val
    1330
```

<210> 213
<211> 5086
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(5086)
<223> n = A,T,C or G

<400> 213

```
agcaccacgg cagcaggagg tttcggncta agttggaggt actggnccac gactgcatgc      60
ccgcgcccgc caggtgatac ctccgccggt gacccagggg ctctgcgaca caaggagtct     120
gcatgtctaa gtgctagaca tgctcagctt tgtggatacg cggactttgt tgctgcttgc     180
agtaacctta tgcctagcaa catgccaatc tttacaagag gaaactgtaa gaaagggccc     240
agccggagat agaggaccac gtggagaaag gggtccacca ggccccccag gcagagatgg     300
tgaagatggt cccacaggcc ctcctggtcc acctggtcct cctggccccc ctggtctcgg     360
tgggaacttt gctgctcagt atgatggaaa aggagttgga cttggccctg gaccaatggg     420
cttaatggga cctagaggcc cacctggtgc agctggagcc ccaggccctc aaggtttcca     480
aggacctgct ggtgagcctg gtgaacctgg tcaaactggt cctgcaggtg ctcgtggtcc     540
agctggccct cctggcaagg ctggtgaaga tggtcaccct ggaaaacccg gacgacctgg     600
tgagagagga gttgttggac cacagggtgc tcgtggtttc cctggaactc ctggacttcc     660
tggcttcaaa ggcattaggg gacacaatgg tctggatgga ttgaagggac agcccggtgc     720
tcctggtgtg aagggtgaac ctggtgcccc tggtgaaaat ggaactccag gtcaaacagg     780
agcccgtggg cttcctggtg agagaggacg tgttggtgcc cctggcccag ctggtgcccg     840
tggcagtgat ggaagtgtgg gtcccgtggg tcctgctggt cccattgggt ctgctggccc     900
tccaggcttc ccaggtgccc ctggccccaa gggtgaaatt ggagctgttg gtaacgctgg     960
tcctgctggt cccgccggtc cccgtggtga agtgggtctt ccaggcctct ccggccccgt    1020
tggacctcct ggtaatcctg gagcaaacgg ccttactggt gccaagggtg ctgctggcct    1080
tcccggcgtt gctggggctc ccggcctccc tggaccccgc ggtattcctg gccctgttgg    1140
tgctgccggt gctactggtg ccagaggact tgttggtgag cctggtccag ctggctccaa    1200
aggagagagc ggtaacaagg gtgagcccgg ctctgctggg ccccaaggtc ctcctggtcc    1260
cagtggtgaa gaaggaaaga gaggccctaa tggggaagct ggatctgccg gccctccagg    1320
acctcctggg ctgagaggta gtcctggttc tcgtggtctt cctggagctg atggcagagc    1380
tggcgtcatg ggccctcctg gtagtcgtgg tgcaagtggc cctgctggag tccgaggacc    1440
taatggagat gctggtcgcc ctggggagcc tggtctcatg ggacccagag gtcttcctgg    1500
ttcccctgga aatatcggcc ccgctggaaa agaaggtcct gtcggcctcc ctggcatcga    1560
cggcaggcct ggcccaattg gcccagctgg agcaagagga gagcctggca acattggatt    1620
ccctggaccc aaaggcccca ctggtgatcc tggcaaaaac ggtgataaag gtcatgctgg    1680
tcttgctggt gctcggggtg ctccaggtcc tgatggaaac aatggtgctc agggacctcc    1740
tggaccacag ggtgttcaag gtggaaaagg tgaacagggt cccgctggtc ctccaggctt    1800
ccagggtctg cctggcccct caggtcccgc tggtgaagtt ggcaaaccag gagaaagggg    1860
tctccatggt gagtttggtc tccctggtcc tgctggtcca agaggggaac gcggtccccc    1920
```

aggtgagagt ggtgctgccg gtcctactgg tcctattgga agccgaggtc cttctggacc 1980
cccagggcct gatggaaaca agggtgaacc tggtgtggtt ggtgctgtgg gcactgctgg 2040
tccatctggt cctagtggac tcccaggaga gaggggtgct gctggcatac ctggaggcaa 2100
gggagaaaag ggtgaacctg gtctcagagg tgaaattggt aaccctggca gagatggtgc 2160
tcgtggtgct catggtgctg taggtgcccc tggtcctgct ggagccacag gtgaccgggg 2220
cgaagctggg gctgctggtc ctgctggtcc tgctggtcct cggggaagcc ctggtgaacg 2280
tggcgaggtc ggtcctgctg gccccaacgg atttgctggt ccggctggtg ctgctggtca 2340
accgggtgct aaaggagaaa gaggagccaa agggcctaag ggtgaaaacg gtgttgttgg 2400
tcccacaggc cccgttggag ctgctggccc agctggtcca aatggtcccc ccggtcctgc 2460
tggaagtcgt ggtgatggag gccccccctgg tatgactggt ttccctggtg ctgctggacg 2520
gactggtccc ccaggaccct ctggtatttc tggccctcct ggtccccctg gtcctgctgg 2580
gaaagaaggg cttcgtggtc ctcgtggtga ccaaggtcca gttggccgaa ctggagaagt 2640
aggtgcagtt ggtccccctg gcttcgctgg tgagaagggt ccctctggag aggctggtac 2700
tgctggacct cctggcactc caggtcctca gggtcttctt ggtgctcctg gtattctggg 2760
tctccctggc tcgagaggtg aacgtggtct acctggtgtt gctggtgctg tgggtgaacc 2820
tggtcctctt ggcattgccg gccctcctgg ggcccgtggt cctcctggtg ctgtgggtag 2880
tcctggagtc aacggtgctc ctggtgaagc tggtcgtgat ggcaaccctg ggaacgatgg 2940
tcccccaggt cgcgatggtc aacccggaca caagggagag cgcggttacc ctggcaatat 3000
tggtcccgtt ggtgctgcag gtgcacctgg tcctcatggc cccgtgggtc ctgctggcaa 3060
acatggaaac cgtggtgaaa ctggtccttc tggtcctgtt ggtcctgctg gtgctgttgg 3120
cccaagaggt cctagtggcc cacaaggcat tcgtggcgat aagggagagc ccggtgaaaa 3180
ggggcccaga ggtcttcctg gcttaaaggg acacaatgga ttgcaaggtc tgcctggtat 3240
cgctggtcac catggtgatc aaggtgctcc tggctccgtg ggtcctgctg gtcctagggg 3300
ccctgctggt ccttctggcc ctgctggaaa agatggtcgc actggacatc ctggtacggt 3360
tggacctgct ggcattcgag gccctcaggg tcaccaaggc cctgctggcc cccctggtcc 3420
ccctggccct cctggacctc caggtgtaag cggtggtggt tatgactttg gttacgatgg 3480
agacttctac agggctgacc agcctcgctc agcaccttct ctcagaccca aggactatga 3540
agttgatgct actctgaagt ctctcaacaa ccagattgag acccttctta ctcctgaagg 3600
ctctagaaag aacccagctc gcacatgccg tgacttgaga ctcagccacc cagagtggag 3660
cagtggttac tactggattg accctaacca aggatgcact atggatgcta tcaaagtata 3720
ctgtgatttc tctactggcg aaacctgtat ccgggcccaa cctgaaaaca tcccagccaa 3780
gaactggtat aggagctcca aggacaagaa acacgtctgg ctaggagaaa ctatcaatgc 3840
tggcagccag tttgaatata atgtagaagg agtgacttcc aaggaaatgg ctacccaact 3900
tgccttcatg cgcctgctgg ccaactatgc ctctcagaac atcacctacc actgcaagaa 3960
cagcattgca tacatggatg aggagactgg caacctgaaa aaggctgtca ttctacaggg 4020
ctctaatgat gttgaacttg ttgctgaggg caacagcagg ttcacttaca ctgttcttgt 4080
agatggctgc tctaaaaaga caaatgaatg gggaaagaca atcattgaat acaaaacaaa 4140
taagccatca cgcctgccct tccttgatat tgcacctttg gacatcggtg gtgctgacca 4200
tgaattcttt gtggacattg gcccagtctg tttcaaataa atgaactcaa tctaaattaa 4260
aaaagaaaga aatttgaaaa aactttctct ttgccatttc ttcttcttct tttttaactg 4320
aaagctgaat ccttccattt cttctgcaca tctacttgct taaattgtgg gcaaaagaga 4380
aaaagaagga ttgatcagag cattgtgcaa tacagtttca ttaactcctt cccccgctcc 4440
cccaaaaatt tgaatttttt tttcaacact cttacacctg ttatggaaaa tgtcaacctt 4500
tgtaagaaaa ccaaaataaa aattgaaaaa taaaaaccat aaacatttgc accacttgtg 4560
gcttttgaat atcttccaca gagggaagtt taaaacccaa acttccaaag gtttaaacta 4620
cctcaaaaca ctttcccatg agtgtgatcc acattgttag gtgctgacct agacagagat 4680
gaactgaggt ccttgttttg ttttgttcat aatacaaagg tgctaattaa tagtatttca 4740
gatacttgaa gaatgttgat ggtgctagaa gaatttgaga agaaatactc ctgtattgag 4800
ttgtatcgtg tggtgtattt tttaaaaaat ttgatttagc attcatattt tccatcttat 4860
tcccaattaa aagtatgcag attatttgcc caaagttgtc ctcttcttca gattcagcat 4920
ttgttctttg ccagtctcat tttcatcttc ttccatggtt ccacagaagc tttgtttctt 4980
gggcaagcag aaaaattaaa ttgtacctat tttgtatatg tgagatgttt aaataaattg 5040
tgaaaaaaat gaaataaagc atgtttggtt ttccaaaaga acatat 5086

<210> 214
<211> 1366
<212> PRT
<213> Homo sapiens

<400> 214

```
Met Leu Ser Phe Val Asp Thr Arg Thr Leu Leu Leu Leu Ala Val Thr
 1               5                  10                  15
Leu Cys Leu Ala Thr Cys Gln Ser Leu Gln Glu Glu Thr Val Arg Lys
            20                  25                  30
Gly Pro Ala Gly Asp Arg Gly Pro Arg Gly Glu Arg Gly Pro Pro Gly
        35                  40                  45
Pro Pro Gly Arg Asp Gly Glu Asp Gly Pro Thr Gly Pro Pro Gly Pro
    50                  55                  60
Pro Gly Pro Pro Gly Pro Pro Gly Leu Gly Gly Asn Phe Ala Ala Gln
65                  70                  75                  80
Tyr Asp Gly Lys Gly Val Gly Leu Gly Pro Gly Pro Met Gly Leu Met
                85                  90                  95
Gly Pro Arg Gly Pro Pro Gly Ala Ala Gly Ala Pro Gly Pro Gln Gly
            100                 105                 110
Phe Gln Gly Pro Ala Gly Glu Pro Gly Glu Pro Gly Gln Thr Gly Pro
        115                 120                 125
Ala Gly Ala Arg Gly Pro Ala Gly Pro Pro Gly Lys Ala Gly Glu Asp
    130                 135                 140
Gly His Pro Gly Lys Pro Gly Arg Pro Gly Glu Arg Gly Val Val Gly
145                 150                 155                 160
Pro Gln Gly Ala Arg Gly Phe Pro Gly Thr Pro Gly Leu Pro Gly Phe
                165                 170                 175
Lys Gly Ile Arg Gly His Asn Gly Leu Asp Gly Leu Lys Gly Gln Pro
            180                 185                 190
Gly Ala Pro Gly Val Lys Gly Glu Pro Gly Ala Pro Gly Glu Asn Gly
        195                 200                 205
Thr Pro Gly Gln Thr Gly Ala Arg Gly Leu Pro Gly Glu Arg Gly Arg
    210                 215                 220
Val Gly Ala Pro Gly Pro Ala Gly Ala Arg Gly Ser Asp Gly Ser Val
225                 230                 235                 240
Gly Pro Val Gly Pro Ala Gly Pro Ile Gly Ser Ala Gly Pro Pro Gly
                245                 250                 255
Phe Pro Gly Ala Pro Gly Pro Lys Gly Glu Ile Gly Ala Val Gly Asn
            260                 265                 270
Ala Gly Pro Ala Gly Pro Ala Gly Pro Arg Gly Glu Val Gly Leu Pro
        275                 280                 285
Gly Leu Ser Gly Pro Val Gly Pro Pro Gly Asn Pro Gly Ala Asn Gly
    290                 295                 300
Leu Thr Gly Ala Lys Gly Ala Ala Gly Leu Pro Gly Val Ala Gly Ala
305                 310                 315                 320
Pro Gly Leu Pro Gly Pro Arg Gly Ile Pro Gly Pro Val Gly Ala Ala
                325                 330                 335
Gly Ala Thr Gly Ala Arg Gly Leu Val Gly Glu Pro Gly Pro Ala Gly
            340                 345                 350
Ser Lys Gly Glu Ser Gly Asn Lys Gly Glu Pro Gly Ser Ala Gly Pro
        355                 360                 365
Gln Gly Pro Pro Gly Pro Ser Gly Glu Glu Gly Lys Arg Gly Pro Asn
    370                 375                 380
Gly Glu Ala Gly Ser Ala Gly Pro Pro Gly Pro Pro Gly Leu Arg Gly
385                 390                 395                 400
Ser Pro Gly Ser Arg Gly Leu Pro Gly Ala Asp Gly Arg Ala Gly Val
                405                 410                 415
Met Gly Pro Pro Gly Ser Arg Gly Ala Ser Gly Pro Ala Gly Val Arg
            420                 425                 430
Gly Pro Asn Gly Asp Ala Gly Arg Pro Gly Glu Pro Gly Leu Met Gly
        435                 440                 445
Pro Arg Gly Leu Pro Gly Ser Pro Gly Asn Ile Gly Pro Ala Gly Lys
    450                 455                 460
Glu Gly Pro Val Gly Leu Pro Gly Ile Asp Gly Arg Pro Gly Pro Ile
465                 470                 475                 480
```

Gly Pro Ala Gly Ala Arg Gly Glu Pro Gly Asn Ile Gly Phe Pro Gly
485 490 495
Pro Lys Gly Pro Thr Gly Asp Pro Gly Lys Asn Gly Asp Lys Gly His
500 505 510
Ala Gly Leu Ala Gly Ala Arg Gly Ala Pro Gly Pro Asp Gly Asn Asn
515 520 525
Gly Ala Gln Gly Pro Pro Gly Pro Gln Gly Val Gln Gly Gly Lys Gly
530 535 540
Glu Gln Gly Pro Ala Gly Pro Pro Gly Phe Gln Gly Leu Pro Gly Pro
545 550 555 560
Ser Gly Pro Ala Gly Glu Val Gly Lys Pro Gly Glu Arg Gly Leu His
565 570 575
Gly Glu Phe Gly Leu Pro Gly Pro Ala Gly Pro Arg Gly Glu Arg Gly
580 585 590
Pro Pro Gly Glu Ser Gly Ala Ala Gly Pro Thr Gly Pro Ile Gly Ser
595 600 605
Arg Gly Pro Ser Gly Pro Pro Gly Pro Asp Gly Asn Lys Gly Glu Pro
610 615 620
Gly Val Val Gly Ala Val Gly Thr Ala Gly Pro Ser Gly Pro Ser Gly
625 630 635 640
Leu Pro Gly Glu Arg Gly Ala Ala Gly Ile Pro Gly Gly Lys Gly Glu
645 650 655
Lys Gly Glu Pro Gly Leu Arg Gly Glu Ile Gly Asn Pro Gly Arg Asp
660 665 670
Gly Ala Arg Gly Ala His Gly Ala Val Gly Ala Pro Gly Pro Ala Gly
675 680 685
Ala Thr Gly Asp Arg Gly Glu Ala Gly Ala Ala Gly Pro Ala Gly Pro
690 695 700
Ala Gly Pro Arg Gly Ser Pro Gly Glu Arg Gly Glu Val Gly Pro Ala
705 710 715 720
Gly Pro Asn Gly Phe Ala Gly Pro Ala Gly Ala Ala Gly Gln Pro Gly
725 730 735
Ala Lys Gly Glu Arg Gly Ala Lys Gly Pro Lys Gly Glu Asn Gly Val
740 745 750
Val Gly Pro Thr Gly Pro Val Gly Ala Ala Gly Pro Ala Gly Pro Asn
755 760 765
Gly Pro Pro Gly Pro Ala Gly Ser Arg Gly Asp Gly Gly Pro Pro Gly
770 775 780
Met Thr Gly Phe Pro Gly Ala Ala Gly Arg Thr Gly Pro Pro Gly Pro
785 790 795 800
Ser Gly Ile Ser Gly Pro Pro Gly Pro Pro Gly Pro Ala Gly Lys Glu
805 810 815
Gly Leu Arg Gly Pro Arg Gly Asp Gln Gly Pro Val Gly Arg Thr Gly
820 825 830
Glu Val Gly Ala Val Gly Pro Pro Gly Phe Ala Gly Glu Lys Gly Pro
835 840 845
Ser Gly Glu Ala Gly Thr Ala Gly Pro Pro Gly Thr Pro Gly Pro Gln
850 855 860
Gly Leu Leu Gly Ala Pro Gly Ile Leu Gly Leu Pro Gly Ser Arg Gly
865 870 875 880
Glu Arg Gly Leu Pro Gly Val Ala Gly Ala Val Gly Glu Pro Gly Pro
885 890 895
Leu Gly Ile Ala Gly Pro Pro Gly Ala Arg Gly Pro Pro Gly Ala Val
900 905 910
Gly Ser Pro Gly Val Asn Gly Ala Pro Gly Glu Ala Gly Arg Asp Gly
915 920 925
Asn Pro Gly Asn Asp Gly Pro Pro Gly Arg Asp Gly Gln Pro Gly His
930 935 940
Lys Gly Glu Arg Gly Tyr Pro Gly Asn Ile Gly Pro Val Gly Ala Ala
945 950 955 960
Gly Ala Pro Gly Pro His Gly Pro Val Gly Pro Ala Gly Lys His Gly

```
                965                 970                 975
Asn Arg Gly Glu Thr Gly Pro Ser Gly Pro Val Gly Pro Ala Gly Ala
            980                 985                 990
Val Gly Pro Arg Gly Pro Ser Gly Pro Gln Gly Ile Arg Gly Asp Lys
        995                 1000                1005
Gly Glu Pro Gly Glu Lys Gly Pro Arg Gly Leu Pro Gly Leu Lys Gly
    1010                1015                1020
His Asn Gly Leu Gln Gly Leu Pro Gly Ile Ala Gly His His Gly Asp
1025                1030                1035                1040
Gln Gly Ala Pro Gly Ser Val Gly Pro Ala Gly Pro Arg Gly Pro Ala
                1045                1050                1055
Gly Pro Ser Gly Pro Ala Gly Lys Asp Gly Arg Thr Gly His Pro Gly
            1060                1065                1070
Thr Val Gly Pro Ala Gly Ile Arg Gly Pro Gln Gly His Gln Gly Pro
        1075                1080                1085
Ala Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Val Ser
    1090                1095                1100
Gly Gly Gly Tyr Asp Phe Gly Tyr Asp Gly Asp Phe Tyr Arg Ala Asp
1105                1110                1115                1120
Gln Pro Arg Ser Ala Pro Ser Leu Arg Pro Lys Asp Tyr Glu Val Asp
                1125                1130                1135
Ala Thr Leu Lys Ser Leu Asn Asn Gln Ile Glu Thr Leu Leu Thr Pro
            1140                1145                1150
Glu Gly Ser Arg Lys Asn Pro Ala Arg Thr Cys Arg Asp Leu Arg Leu
        1155                1160                1165
Ser His Pro Glu Trp Ser Ser Gly Tyr Tyr Trp Ile Asp Pro Asn Gln
    1170                1175                1180
Gly Cys Thr Met Asp Ala Ile Lys Val Tyr Cys Asp Phe Ser Thr Gly
1185                1190                1195                1200
Glu Thr Cys Ile Arg Ala Gln Pro Glu Asn Ile Pro Ala Lys Asn Trp
                1205                1210                1215
Tyr Arg Ser Ser Lys Asp Lys Lys His Val Trp Leu Gly Glu Thr Ile
            1220                1225                1230
Asn Ala Gly Ser Gln Phe Glu Tyr Asn Val Glu Gly Val Thr Ser Lys
        1235                1240                1245
Glu Met Ala Thr Gln Leu Ala Phe Met Arg Leu Leu Ala Asn Tyr Ala
    1250                1255                1260
Ser Gln Asn Ile Thr Tyr His Cys Lys Asn Ser Ile Ala Tyr Met Asp
1265                1270                1275                1280
Glu Glu Thr Gly Asn Leu Lys Lys Ala Val Ile Leu Gln Gly Ser Asn
                1285                1290                1295
Asp Val Glu Leu Val Ala Glu Gly Asn Ser Arg Phe Thr Tyr Thr Val
            1300                1305                1310
Leu Val Asp Gly Cys Ser Lys Lys Thr Asn Glu Trp Gly Lys Thr Ile
        1315                1320                1325
Ile Glu Tyr Lys Thr Asn Lys Pro Ser Arg Leu Pro Phe Leu Asp Ile
    1330                1335                1340
Ala Pro Leu Asp Ile Gly Gly Ala Asp His Glu Phe Phe Val Asp Ile
1345                1350                1355                1360
Gly Pro Val Cys Phe Lys
                1365
```

<210> 215
<211> 4898
<212> DNA
<213> Homo sapiens

<400> 215

```
gaattccggc tgccaggggc gtccggttac atccccgcct tcctctgtcc tggccgcggg      60
accgggtttg cgggaccgca gttcgggaac atgttggcct cgagcagccg gatccgggct     120
gcgtggacgc gggcgctgct gctgccgctg ctgctggcgg ggcctgtggg ctgcctgagc     180
```

cgccaggagc tctttccctt cggccccgga caggggacc tggagctgga ggacggggat 240
gacttcgtct ctcctgccct ggagctgagt ggggcgctcc gcttctacga cagatccgac 300
atcgacgcag tctacgtcac cacaaatggc atcattgcta cgagtgaacc cccggccaaa 360
gaatcccatc ccgggctctt cccaccaaca ttcggtgcag tcgccccttt cctggcggac 420
ttggacacga ccgatggcct ggggaaggtt tattatcgag aagacttatc cccctccatc 480
actcagcgag cagcagagtg tgtccacaga gggttcccgg agatctcttt ccagcctagt 540
agcgcggtgg ttgtcacttg ggaatccgtg gccccctacc aagggcccag cagggaccca 600
gaccagaaag gcaagagaaa cacgttccag gctgttctag cctcctctga ttccagctcc 660
tatgccattt tcctttatcc tgaggatggt ctgcagttcc atacgacatt ctcaaagaag 720
gaaaacaacc aagttcctgc cgtggttgca ttcagtcaag gttcagtggg attcttatgg 780
aagagcaacg gagcttataa catatttgct aatgacaggg aatcaattga aaatttggcc 840
aagagtagta actctgggca gcagggtgtc tgggtgtttg agattgggag tccagccacc 900
accaatggcg tggtgcctgc agacgtgatc ctcggaactg aagatggggc agagtatgat 960
gatgaggatg aagattatga cctggcgacc actcgtctgg gcctggagga tgtgggcacc 1020
acgcccttct cctacaaggc tctgagaagg ggaggtgctg acacatacag tgtgcccagc 1080
gtcctctccc cgcgccgggc agctaccgaa aggccccttg gacctcccac agagagaacc 1140
aggtctttcc agttggcagt ggagactttt caccagcagc accctcaggt catagatgtg 1200
gatgaagttg aggaaacagg agttgttttc agctataaca cggattcccg ccagacgtgt 1260
gctaacaaca gacaccagtg ctcggtgcac gcagagtgca gggactacgc cacgggcttc 1320
tgctgcagct gtgtcgctgg ctatacgggc aatggcaggc aatgtgttgc agaaggttcc 1380
ccccagcgag tcaatggcaa ggtgaaagga aggatctttg tggggagcag ccaggtcccc 1440
attgtctttg agaacactga cctccactct tacgtagtaa tgaaccacgg gcgctcctac 1500
acagccatca gcaccattcc cgagaccgtt ggatattctc tgcttccact ggccccagtt 1560
ggaggcatca ttggatggat gtttgcagtg gagcaggacg gattcaagaa tgggttcagc 1620
atcaccgggg gtgagttcac tcgccaggct gaggtgacct tcgtggggca cccgggcaat 1680
ctggtcatta agcagcggtt cagcggcatc gatgagcatg ggcacctgac catcgacacg 1740
gagctggagg gccgcgtgcc gcagattccg ttcggctcct ccgtgcacat tgagccctac 1800
acggagctgt accactactc cacctcagtg atcacttcct cctccacccg ggagtacacg 1860
gtgactgagc ccgagcgaga tggggcatct ccttcacgca tctacactta ccagtggcgc 1920
cagaccatca ccttccagga atgcgtccac gatgactccc ggccagccct gcccagcacc 1980
cagcagctct cggtggacag cgtgttcgtc ctgtacaacc aggaggagaa gatcttgcgc 2040
tacgctttca gcaactccat tgggcctgtg agggaaggct cccctgatgc tcttcagaat 2100
ccctgctaca tcggcactca tgggtgtgac accaacgcgg cctgtcgccc tggtcccagg 2160
acacagttca cctgcgagtg ctccatcggc ttccgaggag acgggcgaac ctgctatgat 2220
attgatgaat gttcagaaca accctcagtg tgtgggagcc acacaatctg caataatcac 2280
ccaggaacct tccgctgcga gtgtgtggag ggctaccagt tttcagatga gggaacgtgt 2340
gtggctgtcg tggaccagcg ccccatcaac tactgtgaaa ctggccttca taactgcgac 2400
ataccccagc gggcccagtg tatctacaca ggaggctcct cctacacctg ttcctgcttg 2460
ccaggctttt ctggggatgg ccaagcctgc caagatgtag atgaatgcca gccaagccga 2520
tgtcaccctg acgccttctg ctacaacact ccaggctctt tcacgtgcca gtgcaaacct 2580
ggttatcagg gagacggctt ccgttgcgtg cccggagagg tggagaaaac ccggtgccag 2640
cacgagcgag aacacattct cggggcagcg ggggcgacag acccacagcg acccattcct 2700
ccggggctgt tcgttcctga gtgcgatgcg cacgggcact acgcgcccac ccagtgccac 2760
ggcagcaccg gctactgctg gtgcgtggat cgcgacggcc gcgaggtgga gggcaccagg 2820
accaggcccg ggatgacgcc cccgtgtctg agtacagtgg ctcccccgat tcaccaagga 2880
cctgcggtgc ctaccgccgt gatccccttg cctcctggga cccatttact ctttgcccag 2940
actgggaaga ttgagcgcct gcccctggag ggaaatacca tgaggaagac agaagcaaag 3000
gcgttccttc atgtcccggc taaagtcatc attggactgg cctttgactg cgtggacaag 3060
atggtttact ggacggacat cactgagcct tccattggga gagctagtct acatggtgga 3120
gagccaacca ccatcattag acaagatctt ggaagtccag aaggtatcgc tgttgatcac 3180
cttggccgca acatcttctg gacagactct aacctggatc gaatagaagt ggcgaagctg 3240
gacggcacgc agcgccgggt gctctttgag actgacctgg tgaatcccag aggcattgta 3300
acggattccg tgagagggaa cctttactgg acagactgga acagagataa ccccaagatt 3360
gaaacttcct acatggacgg cacgaaccgg aggatccttg tgcaggatga cctgggcttg 3420
cccaatggac tgcacttcga tgcgttctca tctcagctct gctgggtgga tgcaggcacc 3480
aatcgggcgg aatgcctgaa ccccagtcag cccagcagac gcaaggctct cgaagggctc 3540
cagtatcctt ttgctgtgac gagctacggg aagaatctgt atttcacaga ctggaagatg 3600
aattccgtgg ttgctctcga tcttgcaatt tccaaggaga cggatgcttt ccaaccccac 3660
aagcagaccc ggctgtatgg catcaccacg gccctgtctc agtgtccgca aggccataac 3720
tactgctcag tgaacaatgg cggctgcacc cacctatgct tggccacccc agggagcagg 3780
acctgccgtt gccctgacaa caccttggga gttgactgta tcgaacggaa atgaagacaa 3840

```
gagtgcctta tttccttcc aagtatttca cagcaacact ctacttgaag caacttggtc    3900
cagattgaaa agtgtcctct ggctgagtgg ccactaggcc cagacccagc ccagcctgag    3960
ccccaacaac aacttttccc tcactgttcc ccaaaacatg caccctggac ttctctaata    4020
gaaaagtctc cacccctaca caaggacaga accctccacc cctaccccca accctcagac    4080
agacttatac acccctgagt gaggattaca tgcccatccc agtgtcctag gacctttcc     4140
caatactagc cccccagtgg tgaacagaac ctcccaaatt tgagttgcac ccttccctgt    4200
ggccttatga gctcagcctc gctttgaggt acccaccgtc ctgtcagctc cttgacctat    4260
gagctggggc ctgactagga aaagttggga gttaaggagg aaattagcat tccttaatgt    4320
tttgttttgg tgctctgaat ttcttcttta ttatagtcct atagttttac tcctcagttc    4380
ctcaccatca tcatcttgtc taagaccccc attataatat tcatgcgctg ctttttcatc    4440
aaaacctacc ctgtcctaga gatctatggg catttggtgg atgataatga gcagcccctc    4500
ccagatagaa tgtcaatatt tgagcagtag gatattggca tttgttagtt aaaggcttaa    4560
atcaaaagaa tgtccaatgg taggaatttc aaggtgtagg tcagatattt gagaataggg    4620
gatttttttg atgtgcctta aattatacca aagattacta attattcctc tttgcccaaa    4680
atacttgcat ccaaggttct agtctctgtt gctgtgctgg tctttagccc cactgctggc    4740
actgatgtcc ctccttttc acggagacct atctgaggta caggatgggg ctggcaccag    4800
atgatgtccc accacagtcc ctcacctccg gcctccacat gacagaacca atttacactc    4860
aaccatgacc tcacccctcc ttggtttctc cctccccg                           4898
```

<210> 216
<211> 1247
<212> PRT
<213> Homo sapiens

<400> 216

```
Met Leu Ala Ser Ser Ser Arg Ile Arg Ala Ala Trp Thr Arg Ala Leu
 1               5                  10                  15
Leu Leu Pro Leu Leu Leu Ala Gly Pro Val Gly Cys Leu Ser Arg Gln
            20                  25                  30
Glu Leu Phe Pro Phe Gly Pro Gly Gln Gly Asp Leu Glu Leu Glu Asp
        35                  40                  45
Gly Asp Asp Phe Val Ser Pro Ala Leu Glu Leu Ser Gly Ala Leu Arg
    50                  55                  60
Phe Tyr Asp Arg Ser Asp Ile Asp Ala Val Tyr Val Thr Thr Asn Gly
65                  70                  75                  80
Ile Ile Ala Thr Ser Glu Pro Pro Ala Lys Glu Ser His Pro Gly Leu
                85                  90                  95
Phe Pro Pro Thr Phe Gly Ala Val Ala Pro Phe Leu Ala Asp Leu Asp
            100                 105                 110
Thr Thr Asp Gly Leu Gly Lys Val Tyr Tyr Arg Glu Asp Leu Ser Pro
        115                 120                 125
Ser Ile Thr Gln Arg Ala Ala Glu Cys Val His Arg Gly Phe Pro Glu
    130                 135                 140
Ile Ser Phe Gln Pro Ser Ser Ala Val Val Val Thr Trp Glu Ser Val
145                 150                 155                 160
Ala Pro Tyr Gln Gly Pro Ser Arg Asp Pro Asp Gln Lys Gly Lys Arg
                165                 170                 175
Asn Thr Phe Gln Ala Val Leu Ala Ser Ser Asp Ser Ser Ser Tyr Ala
            180                 185                 190
Ile Phe Leu Tyr Pro Glu Asp Gly Leu Gln Phe His Thr Thr Phe Ser
        195                 200                 205
Lys Lys Glu Asn Asn Gln Val Pro Ala Val Val Ala Phe Ser Gln Gly
    210                 215                 220
Ser Val Gly Phe Leu Trp Lys Ser Asn Gly Ala Tyr Asn Ile Phe Ala
225                 230                 235                 240
Asn Asp Arg Glu Ser Ile Glu Asn Leu Ala Lys Ser Ser Asn Ser Gly
                245                 250                 255
Gln Gln Gly Val Trp Val Phe Glu Ile Gly Ser Pro Ala Thr Thr Asn
            260                 265                 270
Gly Val Val Pro Ala Asp Val Ile Leu Gly Thr Glu Asp Gly Ala Glu
        275                 280                 285
```

Tyr Asp Asp Glu Asp Glu Asp Tyr Asp Leu Ala Thr Thr Arg Leu Gly
290 295 300
Leu Glu Asp Val Gly Thr Thr Pro Phe Ser Tyr Lys Ala Leu Arg Arg
305 310 315 320
Gly Gly Ala Asp Thr Tyr Ser Val Pro Ser Val Leu Ser Pro Arg Arg
325 330 335
Ala Ala Thr Glu Arg Pro Leu Gly Pro Pro Thr Glu Arg Thr Arg Ser
340 345 350
Phe Gln Leu Ala Val Glu Thr Phe His Gln Gln His Pro Gln Val Ile
355 360 365
Asp Val Asp Glu Val Glu Glu Thr Gly Val Val Phe Ser Tyr Asn Thr
370 375 380
Asp Ser Arg Gln Thr Cys Ala Asn Asn Arg His Gln Cys Ser Val His
385 390 395 400
Ala Glu Cys Arg Asp Tyr Ala Thr Gly Phe Cys Cys Ser Cys Val Ala
405 410 415
Gly Tyr Thr Gly Asn Gly Arg Gln Cys Val Ala Glu Gly Ser Pro Gln
420 425 430
Arg Val Asn Gly Lys Val Lys Gly Arg Ile Phe Val Gly Ser Ser Gln
435 440 445
Val Pro Ile Val Phe Glu Asn Thr Asp Leu His Ser Tyr Val Val Met
450 455 460
Asn His Gly Arg Ser Tyr Thr Ala Ile Ser Thr Ile Pro Glu Thr Val
465 470 475 480
Gly Tyr Ser Leu Leu Pro Leu Ala Pro Val Gly Gly Ile Ile Gly Trp
485 490 495
Met Phe Ala Val Glu Gln Asp Gly Phe Lys Asn Gly Phe Ser Ile Thr
500 505 510
Gly Gly Glu Phe Thr Arg Gln Ala Glu Val Thr Phe Val Gly His Pro
515 520 525
Gly Asn Leu Val Ile Lys Gln Arg Phe Ser Gly Ile Asp Glu His Gly
530 535 540
His Leu Thr Ile Asp Thr Glu Leu Glu Gly Arg Val Pro Gln Ile Pro
545 550 555 560
Phe Gly Ser Ser Val His Ile Glu Pro Tyr Thr Glu Leu Tyr His Tyr
565 570 575
Ser Thr Ser Val Ile Thr Ser Ser Ser Thr Arg Glu Tyr Thr Val Thr
580 585 590
Glu Pro Glu Arg Asp Gly Ala Ser Pro Ser Arg Ile Tyr Thr Tyr Gln
595 600 605
Trp Arg Gln Thr Ile Thr Phe Gln Glu Cys Val His Asp Asp Ser Arg
610 615 620
Pro Ala Leu Pro Ser Thr Gln Gln Leu Ser Val Asp Ser Val Phe Val
625 630 635 640
Leu Tyr Asn Gln Glu Glu Lys Ile Leu Arg Tyr Ala Phe Ser Asn Ser
645 650 655
Ile Gly Pro Val Arg Glu Gly Ser Pro Asp Ala Leu Gln Asn Pro Cys
660 665 670
Tyr Ile Gly Thr His Gly Cys Asp Thr Asn Ala Ala Cys Arg Pro Gly
675 680 685
Pro Arg Thr Gln Phe Thr Cys Glu Cys Ser Ile Gly Phe Arg Gly Asp
690 695 700
Gly Arg Thr Cys Tyr Asp Ile Asp Glu Cys Ser Glu Gln Pro Ser Val
705 710 715 720
Cys Gly Ser His Thr Ile Cys Asn Asn His Pro Gly Thr Phe Arg Cys
725 730 735
Glu Cys Val Glu Gly Tyr Gln Phe Ser Asp Glu Gly Thr Cys Val Ala
740 745 750
Val Val Asp Gln Arg Pro Ile Asn Tyr Cys Glu Thr Gly Leu His Asn
755 760 765
Cys Asp Ile Pro Gln Arg Ala Gln Cys Ile Tyr Thr Gly Gly Ser Ser

770 775 780
Tyr Thr Cys Ser Cys Leu Pro Gly Phe Ser Gly Asp Gly Gln Ala Cys
785 790 795 800
Gln Asp Val Asp Glu Cys Gln Pro Ser Arg Cys His Pro Asp Ala Phe
805 810 815
Cys Tyr Asn Thr Pro Gly Ser Phe Thr Cys Gln Cys Lys Pro Gly Tyr
820 825 830
Gln Gly Asp Gly Phe Arg Cys Val Pro Gly Glu Val Glu Lys Thr Arg
835 840 845
Cys Gln His Glu Arg Glu His Ile Leu Gly Ala Ala Gly Ala Thr Asp
850 855 860
Pro Gln Arg Pro Ile Pro Pro Gly Leu Phe Val Pro Glu Cys Asp Ala
865 870 875 880
His Gly His Tyr Ala Pro Thr Gln Cys His Gly Ser Thr Gly Tyr Cys
885 890 895
Trp Cys Val Asp Arg Asp Gly Arg Glu Val Glu Gly Thr Arg Thr Arg
900 905 910
Pro Gly Met Thr Pro Pro Cys Leu Ser Thr Val Ala Pro Pro Ile His
915 920 925
Gln Gly Pro Ala Val Pro Thr Ala Val Ile Pro Leu Pro Pro Gly Thr
930 935 940
His Leu Leu Phe Ala Gln Thr Gly Lys Ile Glu Arg Leu Pro Leu Glu
945 950 955 960
Gly Asn Thr Met Arg Lys Thr Glu Ala Lys Ala Phe Leu His Val Pro
965 970 975
Ala Lys Val Ile Ile Gly Leu Ala Phe Asp Cys Val Asp Lys Met Val
980 985 990
Tyr Trp Thr Asp Ile Thr Glu Pro Ser Ile Gly Arg Ala Ser Leu His
995 1000 1005
Gly Gly Glu Pro Thr Thr Ile Ile Arg Gln Asp Leu Gly Ser Pro Glu
1010 1015 1020
Gly Ile Ala Val Asp His Leu Gly Arg Asn Ile Phe Trp Thr Asp Ser
1025 1030 1035 1040
Asn Leu Asp Arg Ile Glu Val Ala Lys Leu Asp Gly Thr Gln Arg Arg
1045 1050 1055
Val Leu Phe Glu Thr Asp Leu Val Asn Pro Arg Gly Ile Val Thr Asp
1060 1065 1070
Ser Val Arg Gly Asn Leu Tyr Trp Thr Asp Trp Asn Arg Asp Asn Pro
1075 1080 1085
Lys Ile Glu Thr Ser Tyr Met Asp Gly Thr Asn Arg Arg Ile Leu Val
1090 1095 1100
Gln Asp Asp Leu Gly Leu Pro Asn Gly Leu His Phe Asp Ala Phe Ser
1105 1110 1115 1120
Ser Gln Leu Cys Trp Val Asp Ala Gly Thr Asn Arg Ala Glu Cys Leu
1125 1130 1135
Asn Pro Ser Gln Pro Ser Arg Arg Lys Ala Leu Glu Gly Leu Gln Tyr
1140 1145 1150
Pro Phe Ala Val Thr Ser Tyr Gly Lys Asn Leu Tyr Phe Thr Asp Trp
1155 1160 1165
Lys Met Asn Ser Val Val Ala Leu Asp Leu Ala Ile Ser Lys Glu Thr
1170 1175 1180
Asp Ala Phe Gln Pro His Lys Gln Thr Arg Leu Tyr Gly Ile Thr Thr
1185 1190 1195 1200
Ala Leu Ser Gln Cys Pro Gln Gly His Asn Tyr Cys Ser Val Asn Asn
1205 1210 1215
Gly Gly Cys Thr His Leu Cys Leu Ala Thr Pro Gly Ser Arg Thr Cys
1220 1225 1230
Arg Cys Pro Asp Asn Thr Leu Gly Val Asp Cys Ile Glu Arg Lys
1235 1240 1245

<210> 217

<211> 10558
<212> DNA
<213> Homo sapiens

<400> 217

cagtttggag ctcagtcttc caccaaaggc cgttcagttc tcctgggctc agcctcctg 60
caaggactgc aagagttttc ctccgcagct ctgagtctcc actttttgg tggagaaagg 120
ctgcaaaaag aaaaagagac gcagtgagtg ggaaaagtat gcatcctatt caaacctaat 180
tgaatcgagg agcccaggga cacacgcctt caggtttgct caggggttca tatttggtgc 240
ttagacaaat tcaaaatgag gaaacatcgg cacttgccct tagtggccgt cttttgcctc 300
tttctctcag gctttcctac aactcatgcc cagcagcagc aagcagatgt caaaaatggt 360
gcggctgctg atataatatt tctagtggat tcctcttgga ccattggaga ggaacatttc 420
caacttgttc gagagtttct atatgatgtt gtaaaatcct tagctgtggg agaaaatgat 480
ttccattttg ctctggtcca gttcaacgga aacccacata ccgagttcct gttaaatacg 540
tatcgtacta aacaagaagt cctttctcat atttccaaca tgtcttatat tgggggaacc 600
aatcagactg gaaaaggatt agaatacata atgcaaagcc acctcaccaa ggctgctgga 660
agccgggccg gtgacggagt ccctcaggtt atcgtagtgt taactgatgg acactcgaag 720
gatggccttg ctctgccctc agcggaactt aagtctgctg atgttaacgt gtttgcaatt 780
ggagttgagg atgcagatga aggagcgtta aaagaaatag caagtgaacc gctcaatatg 840
catatgttca acctagagaa ttttacctca cttcatgaca tagtaggaaa cttagtgtcc 900
tgtgtgcatt catccgtgag tccagaaagg gctggggaca cggaaaccct taaagacatc 960
acagcacaag actctgctga cattattttc cttattgatg gatcaaacaa caccggaagt 1020
gtcaatttcg cagtcattct cgacttcctt gtaaatctcc ttgagaaact cccaattgga 1080
actcagcaga tccgagtggg ggtggtccag tttagcgatg agcccagaac catgttttcc 1140
ttggacacct actccaccaa ggcccaggtt ctgggtgcag tgaaagccct cgggtttgct 1200
ggtggggagt tggccaatat cggcctcgcc cttgatttcg tggtggagaa ccacttcacc 1260
cgggcagggg gcagccgcgt ggaggaaggg gttccccagg tgctggtcct cataagtgcc 1320
gggccttcta gtgacgagat tcgctacggg gtggtagcac tgaagcaggc tagcgtgttc 1380
tcattcggcc ttggagccca ggccgcctcc agggcagagc ttcagcacat agctaccgat 1440
gacaacttgg tgtttactgt cccggaattc cgtagctttg gggacctcca ggagaaatta 1500
ctgccgtaca ttgttggcgt ggcccaaagg cacattgtct tgaaaccgcc aaccattgtc 1560
acacaagtca ttgaagtcaa caagagagac atagtcttcc tggtggatgg ctcatctgca 1620
ctgggactgg ccaacttcaa tgccatccga gacttcattg ctaaagtcat ccagaggctg 1680
gaaatcggac aggatcttat ccaggtggca gtggcccagt atgcagacac tgtgaggcct 1740
gaattttatt tcaataccca tccaacaaaa agggaagtca taaccgctgt gcggaaaatg 1800
aagcccctgg acggctcggc cctgtacacg ggctctgctc tagactttgt tcgtaacaac 1860
ctattcacga gttcagccgg ctaccgggct gccgagggga ttcctaagct tttggtgctg 1920
atcacaggtg gtaagtccct agatgaaatc agccagcctg cccaggagct gaagagaagc 1980
agcataatgg cctttgccat tgggaacaag ggtgccgatc aggctgagct ggaagagatc 2040
gctttcgact cctccctggt gttcatccca gctgagttcc gagccgcccc attgcaaggc 2100
atgctgcctg gcttgctggc acctctcagg accctctctg gaacccctga agttcactca 2160
aacaaaagag atatcatctt tcttttggat ggatcagcca acgttggaaa aaccaatttc 2220
ccttatgtgc gcgactttgt aatgaaccta gttaacagcc ttgatattgg aaatgacaat 2280
attcgtgttg gtttagtgca atttagtgac actcctgtaa cggagttctc tttaaacaca 2340
taccagacca agtcagatat ccttggtcat ctgaggcagc tgcagctcca gggaggttcg 2400
ggcctgaaca caggctcagc cctaagctat gtctatgcca accacttcac ggaagctggc 2460
ggcagcagga tccgtgaaca cgtgccgcag ctcctgcttc tgctcacagc tgggcagtct 2520
gaggactcct atttgcaagc tgccaacgcc ttgacacgcg cgggcatcct gacttttgt 2580
gtgggagcta gccaggcgaa taaggcagag cttgagcaga ttgcttttaa cccaagcctg 2640
gtgtatctca tggatgattt cagctccctg ccagctttgc ctcagcagct gattcagccc 2700
ctaaccacat atgttagtgg aggtgtggag gaagtaccac tcgctcagcc agagagcaag 2760
cgagacattc tgttcctctt tgacggctca gccaatcttg tgggccagtt ccctgttgtc 2820
cgtgactttc tctacaagat tatcgatgag ctcaatgtga agccagaggg gacccgaatt 2880
gcggtggctc agtacagcga tgatgtcaag gtggagtccc gttttgatga gcaccagagt 2940
aagcctgaga tcctgaatct tgtgaagaga atgaagatca agacgggcaa agccctcaac 3000
ctgggctacg cgctggacta tgcacagagg tacatttttg tgaagtctgc tggcagccgg 3060
atcgaggatg gagtgcttca gttcctggtg ctgctggtcg caggaaggtc atctgaccgt 3120
gtggatgggc cagcaagtaa cctgaagcag agtggggttg tgcctttcat cttccaagcc 3180
aagaacgcag accctgctga gttagagcag atcgtgctgt ctccagcgtt tatcctggct 3240
gcagagtcgc ttcccaagat tggagatctt catccacaga tagtgaatct cttaaaatca 3300
gtgcacaacg gagcaccagc accagtttca ggtgaaaagg acgtggtgtt tctgcttgat 3360

ggctctgagg gcgtcaggag cggcttccct ctgttgaaag agtttgtcca gagagtggtg 3420
gaaagcctgg atgtgggcca ggaccgggtc cgcgtggccg tggtgcagta cagcgaccgg 3480
accaggcccg agttctacct gaattcatac atgaacaagc aggacgtcgt caacgctgtc 3540
cgccagctga ccctgctggg agggccgacc cccaacaccg gggccgccct ggagtttgtc 3600
ctgaggaaca tcctggtcag ctctgcggga agcaggataa cagaaggtgt gccccagctg 3660
ctgatcgtcc tcacggccga caggtctggg gatgatgtgc ggaacccctc cgtggtcgtg 3720
aagaggggtg gggctgtgcc cattggcatt ggcatcggga acgctgacat cacagagatg 3780
cagaccatct ccttcatccc ggactttgcc gtggccattc ccacctttcg ccagctgggg 3840
accgtccaac aggtcatctc tgagagggtg acccagctca cccgcgagga gctgagcagg 3900
ctgcagccgg tgttgcagcc tctaccgagc ccaggtgttg gtggcaagag ggacgtggtc 3960
tttctcatcg atgggtccca aagtgccggg cctgagttcc agtacgttcg caccctcata 4020
gagaggctgg ttgactacct ggacgtgggc tttgacacca cccgggtggc tgtcatccag 4080
ttcagcgatg accccaaggc ggagttcctg ctgaacgccc attccagcaa ggatgaagtg 4140
cagaacgcgg tgcagcggct gaggcccaag ggagggcggc agatcaacgt gggcaatgcc 4200
ctggagtacg tgtccaggaa catcttcaag aggcccctgg ggagccgcat tgaagagggc 4260
gtcccacagt tcctggtcct catctcgtct ggaaagtctg acgatgaggt ggtcgtcccg 4320
gcggtggagc tcaagcagtt tggcgtggcc cctttcacga tcgccaggaa cgcagaccag 4380
gaggagctgg tgaagatctc gctgagcccc gaatatgtgt tctcggtgag caccttccgg 4440
gagctgccca gcctggagca gaaactgctg acgcccatca cgaccctgac ctcagagcag 4500
atccagaagc tcttagccag cactcgctat ccacctccag cagttgagag tgatgctgca 4560
gacattgtct ttctgatcga cagctctgag ggagttaggc cagatggctt tgcacatatt 4620
cgagattttg ttagcaggat tgttcgaaga ctcaacatcg gccccagtaa agtgagagtt 4680
ggggtcgtgc agttcagcaa tgatgtcttc ccagaattct atctgaaaac ctacagatcc 4740
caggccccgg tgctggacgc catacggcgc ctgaggctca gagggggtc cccactgaac 4800
actggcaagg ctctcgaatt tgtggcaaga aacctctttg ttaagtctgc ggggagtcgc 4860
atagaagacg gggtgcccca acacctggtc ctggtcctgg gtggaaaatc ccaggacgat 4920
gtgtccaggt tcgcccaggt gatccgttcc tcgggcattg tgagtttagg ggtaggagac 4980
cggaacatcg acagaacaga gctgcagacc atcaccaatg accccagact ggtcttcaca 5040
gtgcgagagt tcagagagct tcccaacata gaagaaagaa tcatgaactc gtttggaccc 5100
tccgcagcca ctcctgcacc tccaggggtg gacacccctc ctccttcacg gccagagaag 5160
aagaaagcag acattgtgtt cctgttggat ggttccatca acttcaggag ggacagtttc 5220
caggaagtgc ttcgttttgt gtctgaaata gtggacacag tttatgaaga tggcgactcc 5280
atccaagtgg ggcttgtcca gtacaactct gaccccactg acgaattctt cctgaaggac 5340
ttctctacca agaggcagat tattgacgcc atcaacaaag tggtctacaa agggggaaga 5400
cacgccaaca ctaaggtggg ccttgagcac ctgcgggtaa accactttgt gcctgaggca 5460
ggcagccgcc tggaccagcg ggtccctcag attgcctttg tgatcacggg aggaaagtcg 5520
gtggaagatg cacaggatgt gagcctggcc ctcacccaga ggggggtcaa agtgtttgct 5580
gttggagtga ggaatatcga ctcggaggag gttggaaaga tagcgtccaa cagcgccaca 5640
gcgttccgcg tgggcaacgt ccaggagctg tccgaactga gcgagcaagt tttggaaact 5700
ttgcatgatg cgatgcatga aacccttttgc cctggtgtaa ctgatgctgc caaagcttgt 5760
aatctggatg tgattctggg gtttgatggt tctagagacc agaatgtttt tgtggcccag 5820
aagggcttcg agtccaaggt ggacgccatc ttgaacagaa tcagccagat gcacagggtc 5880
agctgcagcg gtggccgctc gcccaccgtg cgtgtgtcag tggtggccaa cacgccctcg 5940
ggcccggtgg aggcctttga ctttgacgag taccagccag agatgctcga gaagttccgg 6000
aacatgcgca gccagcaccc ctacgtcctc acggaggaca ccctgaaggt ctacctgaac 6060
aagttcagac agtcctcgcc ggacagcgtg aaggtggtca ttcattttac tgatggagca 6120
gacggagatc tggctgattt acacagagca tctgagaacc tccgccaaga aggagtccgt 6180
gccttgatcc tggtgggcct tgaacgagtg gtcaacttgg agcggctaat gcatctggag 6240
tttgggcgag ggtttatgta tgacaggccc ctgaggctta acttgctgga cttggattat 6300
gaactagcgg agcagcttga caacattgcc gagaaagctt gctgtggggt tccctgcaag 6360
tgctctgggc agaggggaga ccgcgggccc atcggcagca tcgggccaaa gggtattcct 6420
ggagaagacg gctaccgagg ctatcctggt gatgagggtg gacccggtga gcgtggtccg 6480
cctggtgtga acggcactca aggtttccag ggctgcccgg gccagagagg agtaaagggc 6540
tctcggggat tcccaggaga gaagggcgaa gtaggagaaa ttggactgga tggtctggat 6600
ggtgaagatg gagacaaagg attgcctggt tcttctggag agaaagggaa tcctggaaga 6660
aggggtgata aaggacctcg aggagagaaa ggagaaagag gagatgttgg gattcgaggg 6720
gacccgggta acccaggaca agacagccag gagagaggac ccaaaggaga aaccggtgac 6780
ctcggcccca tgggtgtccc agggagagat ggagtacctg gaggacctgg agaaactggg 6840
aagaatggtg gctttggccg aaggggaccc cccggagcta agggcaacaa gggcggtcct 6900
ggccagccgg gctttgaggg agagcagggg accagaggtg cacagggccc agctggtcct 6960
gctggtcctc cagggctgat aggagaacaa ggcatttctg gacctagggg aagcggaggt 7020

gcccgtggcg ctcctggaga acgaggcaga accggtccac tgggaagaaa gggtgagccc 7080
ggagagccag gaccaaaagg aggaatcggg aacccgggcc ctcgtgggga gacgggagat 7140
gacgggagag acggagttgg cagtgaagga cgcagaggca aaaaaggaga aagaggattt 7200
cctggatacc caggaccaaa gggtaaccca ggtgaacctg ggctaaatgg aacaacagga 7260
cccaaaggca tcagaggccg aaggggaaat tcgggacctc cagggatagt tggacagaag 7320
gggagacctg gctacccagg accagctggt ccaaggggca acaggggcga ctccatcgat 7380
caatgtgccc tcatccaaag catcaaagat aaatgccctt gctgttacgg gcccctggag 7440
tgccccgtct tcccaacaga actagccttt gctttagaca cctctgaggg agtcaaccaa 7500
gacactttcg gccggatgcg agatgtggtc ttgagtattg tgaatgtcct gaccattgct 7560
gagagcaact gcccgacggg ggcccgggtg gctgtggtca cctacaacaa cgaggtgacc 7620
acggagatcc ggtttgctga ctccaagagg aagtcggtcc tcctggacaa gattaagaac 7680
cttcaggtgg ctctgacatc caaacagcag agtctggaga ctgccatgtc gtttgtggcc 7740
aggaacacat ttaagcgtgt gaggaacgga ttcctaatga ggaaagtggc tgttttcttc 7800
agcaacacac ccacaagagc atccccacag ctcagagagg ctgtgctcaa actctcagat 7860
gcggggatca ccccccttgtt ccttacaagg caggaagacc ggcagctcat caacgctttg 7920
cagatcaata acacagcagt ggggcatgcg cttgtcctgc ctgcagggag agacctcaca 7980
gacttcctgg agaatgtcct cacgtgtcat gtttgcttgg acatctgcaa catcgaccca 8040
tcctgtggat ttggcagttg gaggccttcc ttcagggaca ggagagcggc agggagtgat 8100
gtggacatcg acatggcttt catcttagac agcgctgaga ccaccaccct gttccagttc 8160
aatgagatga agaagtacat agcgtacctg gtcagacaac tggacatgag cccagatccc 8220
aaggcctccc agcacttcgc cagagtggca gttgtgcagc acgcgccctc tgagtccgtg 8280
gacaatgcca gcatgccacc tgtgaaggtg gaattctccc tgactgacta tggctccaag 8340
gagaagctgg tggacttcct cagcagggga atgacacagt tgcagggaac cagggcctta 8400
ggcagtgcca ttgaatacac catagagaat gtctttgaaa gtgccccaaa cccacgggac 8460
ctgaaaattg tggtcctgat gctgacgggc gaggtgccgg agcagcagct ggaggaggcc 8520
cagagagtca tcctgcaggc caaatgcaag ggctacttct tcgtggtcct gggcattggc 8580
aggaaggtga acatcaagga ggtatacacc ttcgccagtg agccaaacga cgtcttcttc 8640
aaattagtgg acaagtccac cgagctcaac gaggagcctt tgatgcgctt cgggaggctg 8700
ttgccgtcct tcgtcagcag tgaaaatgct ttttacttgt ccccagatat caggaaacag 8760
tgtgattggt tccaagggga ccaacccaca aagaaccttg tgaagtttgg tcacaaacaa 8820
gtaaatgttc cgaataacgt tacttcaagt cctacatcca acccagtgac gacaacgaag 8880
ccggtgacta cgacgaagcc ggtgaccacc acaacaaagc ctgtaaccac cacaacaaag 8940
cctgtgacta ttataaatca gccatctgtg aagccagccg ctgcaaagcc ggcccctgcg 9000
aaacctgtgg ctgccaagcc tgtggccaca aagacggcca ctgttagacc cccagtggcg 9060
gtgaagccag caacagcagc gaagcctgta gcagcaaagc cagcagctgt aagacccccc 9120
gctgctgctg caaaaccagt ggcgaccaag cctgaggtcc ctaggccaca ggcagccaaa 9180
ccagctgcca ccaagccagc caccactaag cccgtggtta agatgctccg tgaagtccag 9240
gtgtttgaga taacagagaa cagcgccaaa ctccactggg agaggcctga gccccccggt 9300
ccttattttt atgacctcac cgtcacctca gcccatgatc agtccctggt tctgaagcag 9360
aacctcacgg tcacggaccg cgtcattgga ggcctgctcg ctgggcagac ataccatgtg 9420
gctgtggtct gctacctgag gtctcaggtc agagccacct accacggaag tttcagtaca 9480
aagaaatctc agcccccacc tccacagcca gcaaggtcag cttctagttc aaccatcaat 9540
ctaatggtga gcacagaacc attggctctc actgaaacag atatatgcaa gttgccgaaa 9600
gacgaaggaa cttgcaggga tttcatatta aaatggtact atgatccaaa caccaaaagc 9660
tgtgcaagat tctggtatgg aggttgtggt ggaaacgaaa acaaatttgg atcacagaaa 9720
gaatgtgaaa aggtttgcgc tcctgtgctc gccaaacccg gagtcatcag tgtgatggga 9780
acctaagcgt gggtggccaa catcatatac ctcttgaaga agaaggagtc agccatcgcc 9840
aacttgtctc tgtagaagct ccgggtgtag attcccttgc actgtatcat ttcatgcttt 9900
gatttacact cgaactcggg agggaacatc ctgctgcatg acctatcagt atggtgctaa 9960
tgtgtctgtg gaccctcgct ctctgtctcc agcagttctc tcgaatactt tgaatgttgt 10020
gtaacagtta gccactgctg gtgtttatgt gaacattcct atcaatccaa attccctctg 10080
gagtttcatg ttatgcctgt tgcaggcaaa tgtaaagtct agaaaataat gcaaatgtca 10140
cggctactct atatactttt gcttggttca ttttttttcc cttttagtta agcatgactt 10200
tagatgggaa gcctgtgtat cgtggagaaa caagagacca acttttttcat tccctgcccc 10260
caatttccca gactagattt caagctaatt ttctttttct gaagcctcta acaaatgatc 10320
tagttcagaa ggaagcaaaa tcccttaatc tatgtgcacc gttgggacca atgccttaat 10380
taaagaattt aaaaaagttg taatagagaa tatttttggc attcctctca atgttgtgtg 10440
ttttttttttt ttgtgtgctg gagggagggg atttaatttt aattttaaaa tgtttaggaa 10500
atttatacaa agaaactttt taataaagta tattgaaagt ttaaaaaaaa aaaaaaaa 10558

<210> 218
<211> 3173
<212> PRT
<213> Homo sapiens

<400> 218

```
Met Arg Lys His Arg His Leu Pro Leu Val Ala Val Phe Cys Leu Phe
 1               5                  10                  15
Leu Ser Gly Phe Pro Thr Thr His Ala Gln Gln Gln Gln Ala Asp Val
            20                  25                  30
Lys Asn Gly Ala Ala Ala Asp Ile Ile Phe Leu Val Asp Ser Ser Trp
        35                  40                  45
Thr Ile Gly Glu Glu His Phe Gln Leu Val Arg Glu Phe Leu Tyr Asp
    50                  55                  60
Val Val Lys Ser Leu Ala Val Gly Glu Asn Asp Phe His Phe Ala Leu
65                  70                  75                  80
Val Gln Phe Asn Gly Asn Pro His Thr Glu Phe Leu Leu Asn Thr Tyr
                85                  90                  95
Arg Thr Lys Gln Glu Val Leu Ser His Ile Ser Asn Met Ser Tyr Ile
            100                 105                 110
Gly Gly Thr Asn Gln Thr Gly Lys Gly Leu Glu Tyr Ile Met Gln Ser
        115                 120                 125
His Leu Thr Lys Ala Ala Gly Ser Arg Ala Gly Asp Gly Val Pro Gln
    130                 135                 140
Val Ile Val Val Leu Thr Asp Gly His Ser Lys Asp Gly Leu Ala Leu
145                 150                 155                 160
Pro Ser Ala Glu Leu Lys Ser Ala Asp Val Asn Val Phe Ala Ile Gly
                165                 170                 175
Val Glu Asp Ala Asp Glu Gly Ala Leu Lys Glu Ile Ala Ser Glu Pro
            180                 185                 190
Leu Asn Met His Met Phe Asn Leu Glu Asn Phe Thr Ser Leu His Asp
        195                 200                 205
Ile Val Gly Asn Leu Val Ser Cys Val His Ser Ser Val Ser Pro Glu
    210                 215                 220
Arg Ala Gly Asp Thr Glu Thr Leu Lys Asp Ile Thr Ala Gln Asp Ser
225                 230                 235                 240
Ala Asp Ile Ile Phe Leu Ile Asp Gly Ser Asn Asn Thr Gly Ser Val
                245                 250                 255
Asn Phe Ala Val Ile Leu Asp Phe Leu Val Asn Leu Leu Glu Lys Leu
            260                 265                 270
Pro Ile Gly Thr Gln Gln Ile Arg Val Gly Val Val Gln Phe Ser Asp
        275                 280                 285
Glu Pro Arg Thr Met Phe Ser Leu Asp Thr Tyr Ser Thr Lys Ala Gln
    290                 295                 300
Val Leu Gly Ala Val Lys Ala Leu Gly Phe Ala Gly Gly Glu Leu Ala
305                 310                 315                 320
Asn Ile Gly Leu Ala Leu Asp Phe Val Val Glu Asn His Phe Thr Arg
                325                 330                 335
Ala Gly Gly Ser Arg Val Glu Glu Gly Val Pro Gln Val Leu Val Leu
            340                 345                 350
Ile Ser Ala Gly Pro Ser Ser Asp Glu Ile Arg Tyr Gly Val Val Ala
        355                 360                 365
Leu Lys Gln Ala Ser Val Phe Ser Phe Gly Leu Gly Ala Gln Ala Ala
    370                 375                 380
Ser Arg Ala Glu Leu Gln His Ile Ala Thr Asp Asp Asn Leu Val Phe
385                 390                 395                 400
Thr Val Pro Glu Phe Arg Ser Phe Gly Asp Leu Gln Glu Lys Leu Leu
                405                 410                 415
Pro Tyr Ile Val Gly Val Ala Gln Arg His Ile Val Leu Lys Pro Pro
            420                 425                 430
```

```
Thr Ile Val Thr Gln Val Ile Glu Val Asn Lys Arg Asp Ile Val Phe
        435                 440                 445
Leu Val Asp Gly Ser Ser Ala Leu Gly Leu Ala Asn Phe Asn Ala Ile
    450                 455                 460
Arg Asp Phe Ile Ala Lys Val Ile Gln Arg Leu Glu Ile Gly Gln Asp
465                 470                 475                 480
Leu Ile Gln Val Ala Val Ala Gln Tyr Ala Asp Thr Val Arg Pro Glu
                485                 490                 495
Phe Tyr Phe Asn Thr His Pro Thr Lys Arg Glu Val Ile Thr Ala Val
            500                 505                 510
Arg Lys Met Lys Pro Leu Asp Gly Ser Ala Leu Tyr Thr Gly Ser Ala
        515                 520                 525
Leu Asp Phe Val Arg Asn Asn Leu Phe Thr Ser Ser Ala Gly Tyr Arg
    530                 535                 540
Ala Ala Glu Gly Ile Pro Lys Leu Leu Val Leu Ile Thr Gly Gly Lys
545                 550                 555                 560
Ser Leu Asp Glu Ile Ser Gln Pro Ala Gln Glu Leu Lys Arg Ser Ser
                565                 570                 575
Ile Met Ala Phe Ala Ile Gly Asn Lys Gly Ala Asp Gln Ala Glu Leu
            580                 585                 590
Glu Glu Ile Ala Phe Asp Ser Ser Leu Val Phe Ile Pro Ala Glu Phe
        595                 600                 605
Arg Ala Ala Pro Leu Gln Gly Met Leu Pro Gly Leu Leu Ala Pro Leu
    610                 615                 620
Arg Thr Leu Ser Gly Thr Pro Glu Val His Ser Asn Lys Arg Asp Ile
625                 630                 635                 640
Ile Phe Leu Leu Asp Gly Ser Ala Asn Val Gly Lys Thr Asn Phe Pro
                645                 650                 655
Tyr Val Arg Asp Phe Val Met Asn Leu Val Asn Ser Leu Asp Ile Gly
            660                 665                 670
Asn Asp Asn Ile Arg Val Gly Leu Val Gln Phe Ser Asp Thr Pro Val
        675                 680                 685
Thr Glu Phe Ser Leu Asn Thr Tyr Gln Thr Lys Ser Asp Ile Leu Gly
    690                 695                 700
His Leu Arg Gln Leu Gln Leu Gln Gly Gly Ser Gly Leu Asn Thr Gly
705                 710                 715                 720
Ser Ala Leu Ser Tyr Val Tyr Ala Asn His Phe Thr Glu Ala Gly Gly
                725                 730                 735
Ser Arg Ile Arg Glu His Val Pro Gln Leu Leu Leu Leu Leu Thr Ala
            740                 745                 750
Gly Gln Ser Glu Asp Ser Tyr Leu Gln Ala Ala Asn Ala Leu Thr Arg
        755                 760                 765
Ala Gly Ile Leu Thr Phe Cys Val Gly Ala Ser Gln Ala Asn Lys Ala
    770                 775                 780
Glu Leu Glu Gln Ile Ala Phe Asn Pro Ser Leu Val Tyr Leu Met Asp
785                 790                 795                 800
Asp Phe Ser Ser Leu Pro Ala Leu Pro Gln Gln Leu Ile Gln Pro Leu
                805                 810                 815
Thr Thr Tyr Val Ser Gly Gly Val Glu Glu Val Pro Leu Ala Gln Pro
            820                 825                 830
Glu Ser Lys Arg Asp Ile Leu Phe Leu Phe Asp Gly Ser Ala Asn Leu
        835                 840                 845
Val Gly Gln Phe Pro Val Val Arg Asp Phe Leu Tyr Lys Ile Ile Asp
    850                 855                 860
Glu Leu Asn Val Lys Pro Glu Gly Thr Arg Ile Ala Val Ala Gln Tyr
865                 870                 875                 880
Ser Asp Asp Val Lys Val Glu Ser Arg Phe Asp Glu His Gln Ser Lys
                885                 890                 895
Pro Glu Ile Leu Asn Leu Val Lys Arg Met Lys Ile Lys Thr Gly Lys
            900                 905                 910
Ala Leu Asn Leu Gly Tyr Ala Leu Asp Tyr Ala Gln Arg Tyr Ile Phe
```

915 920 925
Val Lys Ser Ala Gly Ser Arg Ile Glu Asp Gly Val Leu Gln Phe Leu
930 935 940
Val Leu Leu Val Ala Gly Arg Ser Ser Asp Arg Val Asp Gly Pro Ala
945 950 955 960
Ser Asn Leu Lys Gln Ser Gly Val Val Pro Phe Ile Phe Gln Ala Lys
965 970 975
Asn Ala Asp Pro Ala Glu Leu Glu Gln Ile Val Leu Ser Pro Ala Phe
980 985 990
Ile Leu Ala Ala Glu Ser Leu Pro Lys Ile Gly Asp Leu His Pro Gln
995 1000 1005
Ile Val Asn Leu Leu Lys Ser Val His Asn Gly Ala Pro Ala Pro Val
1010 1015 1020
Ser Gly Glu Lys Asp Val Val Phe Leu Leu Asp Gly Ser Glu Gly Val
1025 1030 1035 1040
Arg Ser Gly Phe Pro Leu Leu Lys Glu Phe Val Gln Arg Val Val Glu
1045 1050 1055
Ser Leu Asp Val Gly Gln Asp Arg Val Arg Val Ala Val Val Gln Tyr
1060 1065 1070
Ser Asp Arg Thr Arg Pro Glu Phe Tyr Leu Asn Ser Tyr Met Asn Lys
1075 1080 1085
Gln Asp Val Val Asn Ala Val Arg Gln Leu Thr Leu Leu Gly Gly Pro
1090 1095 1100
Thr Pro Asn Thr Gly Ala Ala Leu Glu Phe Val Leu Arg Asn Ile Leu
1105 1110 1115 1120
Val Ser Ser Ala Gly Ser Arg Ile Thr Glu Gly Val Pro Gln Leu Leu
1125 1130 1135
Ile Val Leu Thr Ala Asp Arg Ser Gly Asp Asp Val Arg Asn Pro Ser
1140 1145 1150
Val Val Val Lys Arg Gly Gly Ala Val Pro Ile Gly Ile Gly Ile Gly
1155 1160 1165
Asn Ala Asp Ile Thr Glu Met Gln Thr Ile Ser Phe Ile Pro Asp Phe
1170 1175 1180
Ala Val Ala Ile Pro Thr Phe Arg Gln Leu Gly Thr Val Gln Gln Val
1185 1190 1195 1200
Ile Ser Glu Arg Val Thr Gln Leu Thr Arg Glu Glu Leu Ser Arg Leu
1205 1210 1215
Gln Pro Val Leu Gln Pro Leu Pro Ser Pro Gly Val Gly Gly Lys Arg
1220 1225 1230
Asp Val Val Phe Leu Ile Asp Gly Ser Gln Ser Ala Gly Pro Glu Phe
1235 1240 1245
Gln Tyr Val Arg Thr Leu Ile Glu Arg Leu Val Asp Tyr Leu Asp Val
1250 1255 1260
Gly Phe Asp Thr Thr Arg Val Ala Val Ile Gln Phe Ser Asp Asp Pro
1265 1270 1275 1280
Lys Ala Glu Phe Leu Leu Asn Ala His Ser Ser Lys Asp Glu Val Gln
1285 1290 1295
Asn Ala Val Gln Arg Leu Arg Pro Lys Gly Gly Arg Gln Ile Asn Val
1300 1305 1310
Gly Asn Ala Leu Glu Tyr Val Ser Arg Asn Ile Phe Lys Arg Pro Leu
1315 1320 1325
Gly Ser Arg Ile Glu Glu Gly Val Pro Gln Phe Leu Val Leu Ile Ser
1330 1335 1340
Ser Gly Lys Ser Asp Asp Glu Val Val Val Pro Ala Val Glu Leu Lys
1345 1350 1355 1360
Gln Phe Gly Val Ala Pro Phe Thr Ile Ala Arg Asn Ala Asp Gln Glu
1365 1370 1375
Glu Leu Val Lys Ile Ser Leu Ser Pro Glu Tyr Val Phe Ser Val Ser
1380 1385 1390
Thr Phe Arg Glu Leu Pro Ser Leu Glu Gln Lys Leu Leu Thr Pro Ile
1395 1400 1405

Thr Thr Leu Thr Ser Glu Gln Ile Gln Lys Leu Leu Ala Ser Thr Arg
1410 1415 1420
Tyr Pro Pro Pro Ala Val Glu Ser Asp Ala Ala Asp Ile Val Phe Leu
1425 1430 1435 1440
Ile Asp Ser Ser Glu Gly Val Arg Pro Asp Gly Phe Ala His Ile Arg
1445 1450 1455
Asp Phe Val Ser Arg Ile Val Arg Arg Leu Asn Ile Gly Pro Ser Lys
1460 1465 1470
Val Arg Val Gly Val Val Gln Phe Ser Asn Asp Val Phe Pro Glu Phe
1475 1480 1485
Tyr Leu Lys Thr Tyr Arg Ser Gln Ala Pro Val Leu Asp Ala Ile Arg
1490 1495 1500
Arg Leu Arg Leu Arg Gly Gly Ser Pro Leu Asn Thr Gly Lys Ala Leu
1505 1510 1515 1520
Glu Phe Val Ala Arg Asn Leu Phe Val Lys Ser Ala Gly Ser Arg Ile
1525 1530 1535
Glu Asp Gly Val Pro Gln His Leu Val Leu Val Leu Gly Gly Lys Ser
1540 1545 1550
Gln Asp Asp Val Ser Arg Phe Ala Gln Val Ile Arg Ser Ser Gly Ile
1555 1560 1565
Val Ser Leu Gly Val Gly Asp Arg Asn Ile Asp Arg Thr Glu Leu Gln
1570 1575 1580
Thr Ile Thr Asn Asp Pro Arg Leu Val Phe Thr Val Arg Glu Phe Arg
1585 1590 1595 1600
Glu Leu Pro Asn Ile Glu Glu Arg Ile Met Asn Ser Phe Gly Pro Ser
1605 1610 1615
Ala Ala Thr Pro Ala Pro Pro Gly Val Asp Thr Pro Pro Pro Ser Arg
1620 1625 1630
Pro Glu Lys Lys Lys Ala Asp Ile Val Phe Leu Leu Asp Gly Ser Ile
1635 1640 1645
Asn Phe Arg Arg Asp Ser Phe Gln Glu Val Leu Arg Phe Val Ser Glu
1650 1655 1660
Ile Val Asp Thr Val Tyr Glu Asp Gly Asp Ser Ile Gln Val Gly Leu
1665 1670 1675 1680
Val Gln Tyr Asn Ser Asp Pro Thr Asp Glu Phe Phe Leu Lys Asp Phe
1685 1690 1695
Ser Thr Lys Arg Gln Ile Ile Asp Ala Ile Asn Lys Val Val Tyr Lys
1700 1705 1710
Gly Gly Arg His Ala Asn Thr Lys Val Gly Leu Glu His Leu Arg Val
1715 1720 1725
Asn His Phe Val Pro Glu Ala Gly Ser Arg Leu Asp Gln Arg Val Pro
1730 1735 1740
Gln Ile Ala Phe Val Ile Thr Gly Gly Lys Ser Val Glu Asp Ala Gln
1745 1750 1755 1760
Asp Val Ser Leu Ala Leu Thr Gln Arg Gly Val Lys Val Phe Ala Val
1765 1770 1775
Gly Val Arg Asn Ile Asp Ser Glu Glu Val Gly Lys Ile Ala Ser Asn
1780 1785 1790
Ser Ala Thr Ala Phe Arg Val Gly Asn Val Gln Glu Leu Ser Glu Leu
1795 1800 1805
Ser Glu Gln Val Leu Glu Thr Leu His Asp Ala Met His Glu Thr Leu
1810 1815 1820
Cys Pro Gly Val Thr Asp Ala Ala Lys Ala Cys Asn Leu Asp Val Ile
1825 1830 1835 1840
Leu Gly Phe Asp Gly Ser Arg Asp Gln Asn Val Phe Val Ala Gln Lys
1845 1850 1855
Gly Phe Glu Ser Lys Val Asp Ala Ile Leu Asn Arg Ile Ser Gln Met
1860 1865 1870
His Arg Val Ser Cys Ser Gly Gly Arg Ser Pro Thr Val Arg Val Ser
1875 1880 1885
Val Val Ala Asn Thr Pro Ser Gly Pro Val Glu Ala Phe Asp Phe Asp

1890 1895 1900
Glu Tyr Gln Pro Glu Met Leu Glu Lys Phe Arg Asn Met Arg Ser Gln
1905 1910 1915 1920
His Pro Tyr Val Leu Thr Glu Asp Thr Leu Lys Val Tyr Leu Asn Lys
1925 1930 1935
Phe Arg Gln Ser Ser Pro Asp Ser Val Lys Val Val Ile His Phe Thr
1940 1945 1950
Asp Gly Ala Asp Gly Asp Leu Ala Asp Leu His Arg Ala Ser Glu Asn
1955 1960 1965
Leu Arg Gln Glu Gly Val Arg Ala Leu Ile Leu Val Gly Leu Glu Arg
1970 1975 1980
Val Val Asn Leu Glu Arg Leu Met His Leu Glu Phe Gly Arg Gly Phe
1985 1990 1995 2000
Met Tyr Asp Arg Pro Leu Arg Leu Asn Leu Leu Asp Leu Asp Tyr Glu
2005 2010 2015
Leu Ala Glu Gln Leu Asp Asn Ile Ala Glu Lys Ala Cys Cys Gly Val
2020 2025 2030
Pro Cys Lys Cys Ser Gly Gln Arg Gly Asp Arg Gly Pro Ile Gly Ser
2035 2040 2045
Ile Gly Pro Lys Gly Ile Pro Gly Glu Asp Gly Tyr Arg Gly Tyr Pro
2050 2055 2060
Gly Asp Glu Gly Gly Pro Gly Glu Arg Gly Pro Pro Gly Val Asn Gly
2065 2070 2075 2080
Thr Gln Gly Phe Gln Gly Cys Pro Gly Gln Arg Gly Val Lys Gly Ser
2085 2090 2095
Arg Gly Phe Pro Gly Glu Lys Gly Glu Val Gly Glu Ile Gly Leu Asp
2100 2105 2110
Gly Leu Asp Gly Glu Asp Gly Asp Lys Gly Leu Pro Gly Ser Ser Gly
2115 2120 2125
Glu Lys Gly Asn Pro Gly Arg Arg Gly Asp Lys Gly Pro Arg Gly Glu
2130 2135 2140
Lys Gly Glu Arg Gly Asp Val Gly Ile Arg Gly Asp Pro Gly Asn Pro
2145 2150 2155 2160
Gly Gln Asp Ser Gln Glu Arg Gly Pro Lys Gly Glu Thr Gly Asp Leu
2165 2170 2175
Gly Pro Met Gly Val Pro Gly Arg Asp Gly Val Pro Gly Gly Pro Gly
2180 2185 2190
Glu Thr Gly Lys Asn Gly Gly Phe Gly Arg Arg Gly Pro Pro Gly Ala
2195 2200 2205
Lys Gly Asn Lys Gly Gly Pro Gly Gln Pro Gly Phe Glu Gly Glu Gln
2210 2215 2220
Gly Thr Arg Gly Ala Gln Gly Pro Ala Gly Pro Ala Gly Pro Pro Gly
2225 2230 2235 2240
Leu Ile Gly Glu Gln Gly Ile Ser Gly Pro Arg Gly Ser Gly Gly Ala
2245 2250 2255
Arg Gly Ala Pro Gly Glu Arg Gly Arg Thr Gly Pro Leu Gly Arg Lys
2260 2265 2270
Gly Glu Pro Gly Glu Pro Gly Pro Lys Gly Gly Ile Gly Asn Pro Gly
2275 2280 2285
Pro Arg Gly Glu Thr Gly Asp Asp Gly Arg Asp Gly Val Gly Ser Glu
2290 2295 2300
Gly Arg Arg Gly Lys Lys Gly Glu Arg Gly Phe Pro Gly Tyr Pro Gly
2305 2310 2315 2320
Pro Lys Gly Asn Pro Gly Glu Pro Gly Leu Asn Gly Thr Thr Gly Pro
2325 2330 2335
Lys Gly Ile Arg Gly Arg Arg Gly Asn Ser Gly Pro Pro Gly Ile Val
2340 2345 2350
Gly Gln Lys Gly Arg Pro Gly Tyr Pro Gly Pro Ala Gly Pro Arg Gly
2355 2360 2365
Asn Arg Gly Asp Ser Ile Asp Gln Cys Ala Leu Ile Gln Ser Ile Lys
2370 2375 2380

Asp Lys Cys Pro Cys Cys Tyr Gly Pro Leu Glu Cys Pro Val Phe Pro
2385 2390 2395 2400
Thr Glu Leu Ala Phe Ala Leu Asp Thr Ser Glu Gly Val Asn Gln Asp
2405 2410 2415
Thr Phe Gly Arg Met Arg Asp Val Val Leu Ser Ile Val Asn Val Leu
2420 2425 2430
Thr Ile Ala Glu Ser Asn Cys Pro Thr Gly Ala Arg Val Ala Val Val
2435 2440 2445
Thr Tyr Asn Asn Glu Val Thr Thr Glu Ile Arg Phe Ala Asp Ser Lys
2450 2455 2460
Arg Lys Ser Val Leu Leu Asp Lys Ile Lys Asn Leu Gln Val Ala Leu
2465 2470 2475 2480
Thr Ser Lys Gln Gln Ser Leu Glu Thr Ala Met Ser Phe Val Ala Arg
2485 2490 2495
Asn Thr Phe Lys Arg Val Arg Asn Gly Phe Leu Met Arg Lys Val Ala
2500 2505 2510
Val Phe Phe Ser Asn Thr Pro Thr Arg Ala Ser Pro Gln Leu Arg Glu
2515 2520 2525
Ala Val Leu Lys Leu Ser Asp Ala Gly Ile Thr Pro Leu Phe Leu Thr
2530 2535 2540
Arg Gln Glu Asp Arg Gln Leu Ile Asn Ala Leu Gln Ile Asn Asn Thr
2545 2550 2555 2560
Ala Val Gly His Ala Leu Val Leu Pro Ala Gly Arg Asp Leu Thr Asp
2565 2570 2575
Phe Leu Glu Asn Val Leu Thr Cys His Val Cys Leu Asp Ile Cys Asn
2580 2585 2590
Ile Asp Pro Ser Cys Gly Phe Gly Ser Trp Arg Pro Ser Phe Arg Asp
2595 2600 2605
Arg Arg Ala Ala Gly Ser Asp Val Asp Ile Asp Met Ala Phe Ile Leu
2610 2615 2620
Asp Ser Ala Glu Thr Thr Thr Leu Phe Gln Phe Asn Glu Met Lys Lys
2625 2630 2635 2640
Tyr Ile Ala Tyr Leu Val Arg Gln Leu Asp Met Ser Pro Asp Pro Lys
2645 2650 2655
Ala Ser Gln His Phe Ala Arg Val Ala Val Val Gln His Ala Pro Ser
2660 2665 2670
Glu Ser Val Ser Met Pro Pro Val Lys Val Glu Phe Ser Leu Thr Asp
2675 2680 2685
Tyr Gly Ser Lys Glu Lys Leu Val Asp Phe Leu Ser Arg Gly Met Thr
2690 2695 2700
Gln Leu Gln Gly Thr Arg Ala Leu Gly Ser Ala Ile Glu Tyr Thr Ile
2705 2710 2715 2720
Glu Asn Val Phe Glu Ser Ala Pro Asn Pro Arg Asp Leu Lys Ile Val
2725 2730 2735
Val Leu Met Leu Thr Gly Glu Val Pro Glu Gln Gln Leu Glu Glu Ala
2740 2745 2750
Gln Arg Val Ile Leu Gln Ala Lys Cys Lys Gly Tyr Phe Phe Val Val
2755 2760 2765
Leu Gly Ile Gly Arg Lys Val Asn Ile Lys Glu Val Tyr Thr Phe Ala
2770 2775 2780
Ser Glu Pro Asn Asp Val Phe Phe Lys Leu Val Asp Lys Ser Thr Glu
2785 2790 2795 2800
Leu Asn Glu Glu Pro Leu Met Arg Phe Gly Arg Leu Leu Pro Ser Phe
2805 2810 2815
Val Ser Ser Glu Asn Ala Phe Tyr Leu Ser Pro Asp Ile Arg Lys Gln
2820 2825 2830
Cys Asp Trp Phe Gln Gly Asp Gln Pro Thr Lys Asn Leu Val Lys Phe
2835 2840 2845
Gly His Lys Gln Val Asn Val Pro Asn Asn Val Thr Ser Ser Pro Thr
2850 2855 2860
Ser Asn Pro Val Thr Thr Thr Lys Pro Val Thr Thr Thr Lys Pro Val

2865 2870 2875 2880
Thr Thr Thr Thr Lys Pro Val Thr Thr Thr Thr Lys Pro Val Thr Ile
2885 2890 2895
Ile Asn Gln Pro Ser Val Lys Pro Ala Ala Ala Lys Pro Ala Pro Ala
2900 2905 2910
Lys Pro Val Ala Ala Lys Pro Val Ala Thr Lys Thr Ala Thr Val Arg
2915 2920 2925
Pro Pro Val Ala Val Lys Pro Ala Thr Ala Ala Lys Pro Val Ala Ala
2930 2935 2940
Lys Pro Ala Ala Val Arg Pro Pro Ala Ala Ala Ala Lys Pro Val Ala
2945 2950 2955 2960
Thr Lys Pro Glu Val Pro Arg Pro Gln Ala Ala Lys Pro Ala Ala Thr
2965 2970 2975
Lys Pro Ala Thr Thr Lys Pro Val Val Lys Met Leu Arg Glu Val Gln
2980 2985 2990
Val Phe Glu Ile Thr Glu Asn Ser Ala Lys Leu His Trp Glu Arg Pro
2995 3000 3005
Glu Pro Pro Gly Pro Tyr Phe Tyr Asp Leu Thr Val Thr Ser Ala His
3010 3015 3020
Asp Gln Ser Leu Val Leu Lys Gln Asn Leu Thr Val Thr Asp Arg Val
3025 3030 3035 3040
Ile Gly Gly Leu Leu Ala Gly Gln Thr Tyr His Val Ala Val Val Cys
3045 3050 3055
Tyr Leu Arg Ser Gln Val Arg Ala Thr Tyr His Gly Ser Phe Ser Thr
3060 3065 3070
Lys Lys Ser Gln Pro Pro Pro Pro Gln Pro Ala Arg Ser Ala Ser Ser
3075 3080 3085
Ser Thr Ile Asn Leu Met Val Ser Thr Glu Pro Leu Ala Leu Thr Glu
3090 3095 3100
Thr Asp Ile Cys Lys Leu Pro Lys Asp Glu Gly Thr Cys Arg Asp Phe
3105 3110 3115 3120
Ile Leu Lys Trp Tyr Tyr Asp Pro Asn Thr Lys Ser Cys Ala Arg Phe
3125 3130 3135
Trp Tyr Gly Gly Cys Gly Gly Asn Glu Asn Lys Phe Gly Ser Gln Lys
3140 3145 3150
Glu Cys Glu Lys Val Cys Ala Pro Val Leu Ala Lys Pro Gly Val Ile
3155 3160 3165
Ser Val Met Gly Thr
3170

<210> 219
<211> 2806
<212> DNA
<213> Homo sapiens

<400> 219
ggatccagga ctgagatccc agaaccatga acctggccat cagcatcgct ctcctgctaa 60
caggtacccg gcatggggca ggactggggc tccaggcgcc ctggcttcct tccctccaga 120
gaagcagctt ctccctcaca gtctcagaaa agcgcaggtg acaaagagag ggctcttttt 180
catcctgaag tcagccgatc caccgcgctg atattctgac ggcctgaggt ggtttttgga 240
aacacagttt gctgagccct ccttcacact attgaactag aatccccaac tgagaaccca 300
ggaaccagca tcaactccct aagatctcct gtccttgaaa cacattgata ggatccaagg 360
ctcaagcaga gtggggaggg aggctggggt ctgcaaagga gaagtgggat ccctggggtg 420
gggaaaggca ctcagagagc agaccccggt cccctcccta gccaggccca tctctccact 480
tcaggtgggt gggaggcccc tgtgccgcag gcccctccag tttgaaggag gcactgctgg 540
tgccagtctt gcaggtctcc cgagggcaga aggtgaccag cctaacggcc tgcctagtgg 600
accagagcct tcgtctggac tgccgccatg agaataccag cagttcaccc atccagtacg 660
agttcagcct gacccgtgag acaaagaagc acgtgctctt tggcactgtg ggggtgcctg 720
agcacacata ccgctcccga accaacttca ccagcaaata ccacatgaag gtcctctact 780
tatccgcctt cactagcaag gacgagggca cctacacgtg tgcactccac cactctggcc 840
attccccacc catctcctcc cagaacgtca cagtgctcag aggtgagaca agcccctaac 900

```
aaggtcaagt gagctgggag agccaggctc ggggacagca ggcagttccc ttggctggac     960
tagagaggag aatagcccca taacgctctc accctctccc aactgctgcc tggtcaactg    1020
gggaaccatt gccttcggtg tgaatggggt gaagagctca gggccagaca ggcagagcag    1080
tgtggttcca ccagaactgt gggcaaggcc tttggcccct aatcttcctt ctcccagcgg    1140
gaaacaggga tgacaccacc tccctcagcc agttttcttg tcatgatgtt tagtaaggtt    1200
ttcataagat gatatgtgtg caagagatca gtaatctgca aatgggaaag atggctggtt    1260
ctgtgagacc aggctgttcc tggtcccagc taagacattg cagtacccac ctcccaaagg    1320
gagtacaccc ttgctttggg cctgtgcctg cctgagtcct gatccgtctt ccttcctacc    1380
ctgcccccgg ccccttctc tttctgcaga caaactggtc aagtgtgagg gcatcagcct    1440
gctggctcag aacacctcgt ggctgctgct gctcctgctg tccctctccc tcctccaggc    1500
cacggatttc atgtccctgt gactggtggg gcccatggag gagacaggaa gcctcaagtt    1560
ccagtgcaga gatcctactt ctctgagtca gctgaccccc tccccccaat ccctcaaacc    1620
ttgaggagaa gtggggaccc caccctcat caggagttcc agtgctgcat gcgattatct    1680
acccacgtcc acgcggccac ctcaccctct ccgcacacct ctggctgtct ttttgtactt    1740
tttgttccag agctgcttct gtctggttta tttaggtttt atccttcctt ttctttgaga    1800
gttcgtgaag agggaagcca ggattgggga cctgatggag agtgagagca tgtgaggggt    1860
agtgggatgg tggggtacca gccactggag gggtcatcct tgcccatcgg gaccagaaac    1920
ctgggagaga cttggatgag gagtggttgg gctgtgctgg gcctagcacg gacatggtct    1980
gtcctgacag cactcctcgg caggcatggc tggtgcctga agaccccaga tgtgagggca    2040
ccaccaagaa tttgtggcct accttgtgag ggagagaact gaggatctcc agcattctca    2100
gccacaacca aaaaaaaata aaaagggcag ccctccttac cactgtggaa gtccctcaga    2160
ggccttgggg catgacccag tgaagatgca ggtttgacca ggaaagcagc gctagtggag    2220
ggttggagaa ggaggtaaag gatgagggtt catcatccct ccctgcctaa ggaagctaaa    2280
agcatggccc tgctgccccc ccctgcctcc acccacagtg gagagggcta caaaggagga    2340
caagaccctc tcaggctgtc ccaagctccc aagagcttcc agagctctga cccacagcct    2400
ccaagtcagg tggggtggag tcccagagct gcacagggtt tggcccaagt ttctaaggga    2460
ggcacttcct cccctcgccc atcagtgcca gcccctgctg gctggtgcct gagcccctca    2520
gacagccccc tgccccgcag gcctgccttc tcagggactt ctgcggggcc tgaggcaagc    2580
catggagtga gacccaggag ccggacactt ctcaggaaat ggcttttccc aacccccagc    2640
ccccacccgg tggttcttcc tgttctgtga ctgtgtatag tgccaccaca gcttatggca    2700
tctcattgag gacaaagaaa actgcacaat aaaaccaagc ctctggaatc tgtcctcgtg    2760
tccacctggc cttcgctcct ccagcagtgc ctgcctgccc ccgctt                   2806
```

<210> 220
<211> 161
<212> PRT
<213> Homo sapiens

<400> 220

```
Met Asn Leu Ala Ile Ser Ile Ala Leu Leu Leu Thr Val Leu Gln Val
 1               5                  10                  15
Ser Arg Gly Gln Lys Val Thr Ser Leu Thr Ala Cys Leu Val Asp Gln
            20                  25                  30
Ser Leu Arg Leu Asp Cys Arg His Glu Asn Thr Ser Ser Ser Pro Ile
        35                  40                  45
Gln Tyr Glu Phe Ser Leu Thr Arg Glu Thr Lys Lys His Val Leu Phe
    50                  55                  60
Gly Thr Val Gly Val Pro Glu His Thr Tyr Arg Ser Arg Thr Asn Phe
65                  70                  75                  80
Thr Ser Lys Tyr His Met Lys Val Leu Tyr Leu Ser Ala Phe Thr Ser
                85                  90                  95
Lys Asp Glu Gly Thr Tyr Thr Cys Ala Leu His His Ser Gly His Ser
            100                 105                 110
Pro Pro Ile Ser Ser Gln Asn Val Thr Val Leu Arg Asp Lys Leu Val
        115                 120                 125
Lys Cys Glu Gly Ile Ser Leu Leu Ala Gln Asn Thr Ser Trp Leu Leu
    130                 135                 140
Leu Leu Leu Leu Ser Leu Ser Leu Leu Gln Ala Thr Asp Phe Met Ser
145                 150                 155                 160
Leu
```

<210> 221
<211> 736
<212> DNA
<213> Homo sapiens

<400> 221
ggctctcacc ctcctctcct gcagctccag ctctgtgctc tgcctctgag gagaccatgg 60
cccggcctct gtgtaccctg ctactcctga tggctaccct ggctggggct ctggcctcga 120
gctccaagga ggagaatagg ataatcccag gtggcatcta tgatgcagac ctcaatgatg 180
agtgggtaca gcgtgccctt cacttcgcca tcagcgagta caacaaggcc accgaagatg 240
agtactacag acgcccgctg caggtgctgc gagccaggga gcagaccttt gggggggtga 300
attacttctt cgacgtagag gtgggccgca ccatatgtac caagtcccag cccaacttgg 360
acacctgtgc cttccatgaa cagccagaac tgcagaagaa acagttatgc tctttcgaga 420
tctacgaagt tccctgggag gacagaatgt ccctggtgaa ttccaggtgt caagaagcct 480
aggggtctgt gccaggccag tcacaccgac caccacccac tcccaccccc tgtagtgctc 540
ccacccctgg actggtggcc cccaccctgc gggaggcctc cccatgtgcc tgtgccaaga 600
gacagacaga gaaggctgca ggagtccttt gttgctcagc agggcgctct gccctccctc 660
cttccttctt gcttctaata gacctggtac atggtacaca cacccccacc tcctgcaatt 720
aaacagtagc atcgcc 736

<210> 222
<211> 594
<212> DNA
<213> Homo sapiens

<400> 222
cccaccctgg gacaggctct caccctcctc tcctgcagct ccagctttgt gctctgcctc 60
tgaggagacc atggcccagc atctgagtac cctgctgctc ctgctggcca ccctagctgt 120
ggccctggcc tggagcccca aggaggagga taggataatc ccgggtggca tctataacgc 180
agacctcaat gatgagtggg tacagcgtgc ccttcacttc gccatcagcg agtataacaa 240
ggccaccaaa gatgactact acagacgtcc gctgcgggta ctaagagcca ggcaacagac 300
cgttgggggg gtgaattact tcttcgacgt agaggtgggc cgaaccatat gtaccaagtc 360
ccagcccaac ttggacacct gtgccttcca tgaacagcca gaactgcaga agaaacagtt 420
gtgctctttc gagatctacg aagttccctg ggagaacaga aggtccctgg tgaaatccag 480
gtgtcaagaa tcctagggat ctgtgccagg ccattcgcac cagccaccac ccactcccac 540
cccctgtagt gctcccaccc ctgggggcca atgggactgt gcaggagaca gcgg 594

<210> 223
<211> 141
<212> PRT
<213> Homo sapiens

<400> 223
Met Ala Arg Pro Leu Cys Thr Leu Leu Leu Leu Met Ala Thr Leu Ala
 1   5   10   15
Gly Ala Leu Ala Ser Ser Ser Lys Glu Glu Asn Arg Ile Ile Pro Gly
            20   25   30
Gly Ile Tyr Asp Ala Asp Leu Asn Asp Glu Trp Val Gln Arg Ala Leu
        35   40   45
His Phe Ala Ile Ser Glu Tyr Asn Lys Ala Thr Glu Asp Glu Tyr Tyr
    50   55   60
Arg Arg Pro Leu Gln Val Leu Arg Ala Arg Glu Gln Thr Phe Gly Gly
65   70   75   80
Val Asn Tyr Phe Phe Asp Val Glu Val Gly Arg Thr Ile Cys Thr Lys
                85   90   95
Ser Gln Pro Asn Leu Asp Thr Cys Ala Phe His Glu Gln Pro Glu Leu
            100   105   110
Gln Lys Lys Gln Leu Cys Ser Phe Glu Ile Tyr Glu Val Pro Trp Glu
        115   120   125
Asp Arg Met Ser Leu Val Asn Ser Arg Cys Gln Glu Ala

130 135 140

<210> 224
<211> 141
<212> PRT
<213> Homo sapiens

<400> 224

```
Met Ala Gln His Leu Ser Thr Leu Leu Leu Leu Leu Ala Thr Leu Ala
 1               5                  10                  15
Val Ala Leu Ala Trp Ser Pro Lys Glu Glu Asp Arg Ile Ile Pro Gly
            20                  25                  30
Gly Ile Tyr Asn Ala Asp Leu Asn Asp Glu Trp Val Gln Arg Ala Leu
        35                  40                  45
His Phe Ala Ile Ser Glu Tyr Asn Lys Ala Thr Lys Asp Asp Tyr Tyr
    50                  55                  60
Arg Arg Pro Leu Arg Val Leu Arg Ala Arg Gln Gln Thr Val Gly Gly
65                  70                  75                  80
Val Asn Tyr Phe Phe Asp Val Glu Val Gly Arg Thr Ile Cys Thr Lys
                85                  90                  95
Ser Gln Pro Asn Leu Asp Thr Cys Ala Phe His Glu Gln Pro Glu Leu
            100                 105                 110
Gln Lys Lys Gln Leu Cys Ser Phe Glu Ile Tyr Glu Val Pro Trp Glu
        115                 120                 125
Asn Arg Arg Ser Leu Val Lys Ser Arg Cys Gln Glu Ser
    130                 135                 140
```

<210> 225
<211> 5460
<212> DNA
<213> Homo sapiens

<400> 225

```
cgggcccggt gctgaagggc agggaacaac ttgatggtgc tactttgaac tgcttttctt      60
ttctccttttt tgcacaaaga gtctcatgtc tgatatttag acatgatgag ctttgtgcaa     120
aaggggagct ggctacttct cgctctgctt catcccacta ttattttggc acaacaggaa     180
gctgttgaag gaggatgttc ccatcttggt cagtcctatg cggatagaga tgtctggaag     240
ccagaaccat gccaaatatg tgtctgtgac tcaggatccg ttctctgcga tgacataata     300
tgtgacgatc aagaattaga ctgccccaac ccagaaattc catttggaga atgttgtgca     360
gtttgcccac agcctccaac tgctcctact cgccctccta atggtcaagg acctcaaggc     420
cccaagggag atccaggccc tcctggtatt cctgggagaa atggtgaccc tggtattcca     480
ggacaaccag ggtcccctgg ttctcctggc ccccctggaa tctgtgaatc atgccctact     540
ggtcctcaga actattctcc ccagtatgat tcatatgatg tcaagtctgg agtagcagta     600
ggaggactcg caggctatcc tggaccagct ggcccccccag gccctcccgg tccccctggt     660
acatctggtc atcctggttc ccctggatct ccaggatacc aaggaccccc tggtgaacct     720
gggcaagctg gtccttcagg ccctccagga cctcctggtg ctataggtcc atctggtcct     780
gctggaaaag atggagaatc aggtagaccc ggacgacctg gagagcgagg attgcctgga     840
cctccaggta tcaaaggtcc agctgggata cctggattcc ctggtatgaa aggacacaga     900
ggcttcgatg gacgaaatgg agaaaagggt gaaacaggtg ctcctggatt aaagggtgaa     960
aatggtcttc caggcgaaaa tggagctcct ggacccatgg gtccaagagg ggctcctggt    1020
gagcgaggac ggccaggact tcctggggct gcaggtgctc ggggtaatga cggtgctcga    1080
ggcagtgatg gtcaaccagg ccctcctggt cctcctggaa ctgccggatt ccctggatcc    1140
cctggtgcta agggtgaagt tggacctgca gggtctcctg gttcaaatgg tgcccctgga    1200
caaagaggag aacctggacc tcagggacac gctggtgctc aaggtcctcc tggccctcct    1260
gggattaatg gtagtcctgg tggtaaaggc gaaatgggtc ccgctggcat tcctggagct    1320
cctggactga tgggagcccg gggtcctcca ggaccagccg gtgctaatgg tgctcctgga    1380
ctgcgaggtg gtgcaggtga gcctggtaag aatggtgcca aaggagagcc cggaccacgt    1440
ggtgaacgcg gtgaggctgg tattccaggt gttccaggag ctaaaggcga agatggcaag    1500
gatggatcac ctggagaacc tggtgcaaat gggcttccag gagctgcagg agaaaggggt    1560
gcccctgggt tccgaggacc tgctggacca aatggcatcc caggagaaaa gggtcctgct    1620
ggagagcgtg gtgctccagg ccctgcaggg cccagaggag ctgctggaga acctggcaga    1680
```

gatggcgtcc ctggaggtcc aggaatgagg ggcatgcccg gaagtccagg aggaccagga 1740
agtgatggga aaccagggcc tcccggaagt caaggagaaa gtggtcgacc aggtcctcct 1800
gggccatctg gtccccgagg tcagcctggt gtcatgggct tccccggtcc taaaggaaat 1860
gatggtgctc ctggtaagaa tggagaacga ggtggccctg gaggacctgg ccctcagggt 1920
cctcctggaa agaatggtga aactggacct caaggacccc cagggcctac tgggcctggt 1980
ggtgacaaag gagacacagg acccccctggt ccacaaggat tacaaggctt gcctggtaca 2040
ggtggtcctc caggagaaaa tggaaaacct ggggaaccag gtccaaaggg tgatgccggt 2100
gcacctggag ctccaggagg caagggtgat gctggtgccc ctggtgaacg tggacctcct 2160
ggattggcag gggccccagg acttagaggt ggagctggtc cccctggtcc cgaaggagga 2220
aagggtgctg ctggtcctcc tgggccacct ggtgctgctg gtactcctgg tctgcaagga 2280
atgcctggag aaagaggagg tcttggaagt cctggtccaa agggtgacaa gggtgaacca 2340
ggcggcccag gtgctgatgg tgtcccaggg aaagatggcc caaggggtcc tactggtcct 2400
attggtcctc ctggcccagc tggccagcct ggagataagg gtgaaggtgg tgcccccgga 2460
cttccaggta tagctggacc tcgtggtagc cctggtgaga gaggtgaaac tggccctcca 2520
ggacctgctg gtttccctgg tgctcctgga cagaatggtg aacctggtgg taaaggagaa 2580
agaggggctc cgggtgagaa aggtgaagga ggccctcctg gagttgcagg acccccctgga 2640
ggttctggac ctgctggtcc tcctggtccc caaggtgtca aaggtgaacg tggcagtcct 2700
ggtggacctg gtgctgctgg cttccctggt gctcgtggtc ttcctggtcc tcctggtagt 2760
aatggtaacc caggaccccc aggtcccagc ggttctccag gcaaggatgg gcccccaggt 2820
cctgcgggta acactggtgc tcctggcagc cctggagtgt ctggaccaaa aggtgatgct 2880
ggccaaccag gagagaaggg atcgcctggt gcccagggcc caccaggagc tccaggccca 2940
cttgggattg ctgggatcac tggagcacgg ggtcttgcag gaccaccagg catgccaggt 3000
cctaggggaa gccctggccc tcagggtgtc aagggtgaaa gtgggaaacc aggagctaac 3060
ggtctcagtg gagaacgtgg tccccctgga ccccagggtc ttcctggtct ggctggtaca 3120
gctggtgaac ctggaagaga tggaaaccct ggatcagatg gtcttccagg ccgagatgga 3180
tctcctggtg gcaagggtga tcgtggtgaa aatggctctc ctggtgcccc tggcgctcct 3240
ggtcatccag gcccacctgg tcctgtcggt ccagctggaa agagtggtga cagaggagaa 3300
agtggccctg ctggccctgc tggtgctccc ggtcctgctg gttcccgagg tgctcctggt 3360
cctcaaggcc cacgtggtga caaaggtgaa acaggtgaac gtggagctgc tggcatcaaa 3420
ggacatcgag gattccctgg taatccaggt gccccaggtt ctccaggccc tgctggtcag 3480
cagggtgcaa tcggcagtcc aggacctgca ggccccagag gacctgttgg acccagtgga 3540
cctcctggca aagatggaac cagtggacat ccaggtccca ttggaccacc agggcctcga 3600
ggtaacagag gtgaaagagg atctgagggc tccccaggcc acccagggca accaggccct 3660
cctggacctc ctggtgcccc tggtccttgc tgtggtggtg ttggagccgc tgccattgct 3720
gggattggag gtgaaaaagc tggcggtttt gccccgtatt atggagatga accaatggat 3780
ttcaaaatca acaccgatga gattatgact tcactcaagt ctgttaatgg acaaatagaa 3840
agcctcatta gtcctgatgg ttctcgtaaa aaccccgcta gaaactgcag agacctgaaa 3900
ttctgccatc ctgaactcaa gagtggagaa tactgggttg accctaacca aggatgcaaa 3960
ttggatgcta tcaaggtatt ctgtaatatg gaaactgggg aaacatgcat aagtgccaat 4020
cctttgaatg ttccacggaa acactggtgg acagattcta gtgctgagaa gaaacacgtt 4080
tggtttggag agtccatgga tggtggtttt cagtttagct acggcaatcc tgaacttcct 4140
gaagatgtcc ttgatgtgca gctggcattc cttcgacttc tctccagccg agcttcccag 4200
aacatcacat atcactgcaa aaatagcatt gcatacatgg atcaggccag tggaaatgta 4260
aagaaggccc tgaagctgat ggggtcaaat gaaggtgaat tcaaggctga aggaaatagc 4320
aaattcacct acacagttct ggaggatggt tgcacgaaac acactgggga atggagcaaa 4380
acagtctttg aatatcgaac acgcaaggct gtgagactac ctattgtaga tattgcaccc 4440
tatgacattg gtggtcctga tcaagaattt ggtgtggacg ttggccctgt ttgcttttta 4500
taaaccaaac tctatctgaa atcccaacaa aaaaaattta actccatatg tgttcctctt 4560
gttctaatct tgtcaaccag tgcaagtgac cgacaaaatt ccagttattt atttccaaaa 4620
tgtttggaaa cagtataatt tgacaaagaa aaatgatact tctctttttt tgctgttcca 4680
ccaaatacaa ttcaaatgct ttttgtttta ttttttttacc aattccaatt tcaaaatgtc 4740
tcaatggtgc tataataaat aaacttcaac actctttatg ataacaacac tgtgttatat 4800
tctttgaatc ctagcccatc tgcagagcaa tgactgtgct caccagtaaa agataacctt 4860
tctttctgaa atagtcaaat acgaaattag aaaagccctc cctattttaa ctacctcaac 4920
tggtcagaaa cacagattgt attctatgag tcccagaaga tgaaaaaaat tttatacgtt 4980
gataaaactt ataaatttca ttgattaatc tcctggaaga ttggtttaaa aagaaaagtg 5040
taatgcaaga atttaaagaa atatttttaa agccacaatt attttaatat tggatatcaa 5100
ctgcttgtaa aggtgctcct ctttttttctt gtcattgctg gtcaagatta ctaatatttg 5160
ggaaggcttt aaagacgcat gttatggtgc taatgtactt tcacttttaa actctagatc 5220
agaattgttg acttgcattc agaacataaa tgcacaaaat ctgtacatgt ctcccatcag 5280
aaagattcat tggcatgcca cagggattct cctccttcat cctgtaaagg tcaacaataa 5340

aaaccaaatt atggggctgc ttttgtcaca ctagcataga gaatgtgttg aaatttaact 5400
ttgtaagctt gtatgtggtt gttgatcttt tttttcctta cagacaccca taataaaata 5460

<210> 226
<211> 1466
<212> PRT
<213> Homo sapiens

<400> 226

```
Met Met Ser Phe Val Gln Lys Gly Ser Trp Leu Leu Leu Ala Leu Leu
 1               5                  10                  15
His Pro Thr Ile Ile Leu Ala Gln Gln Glu Ala Val Glu Gly Gly Cys
            20                  25                  30
Ser His Leu Gly Gln Ser Tyr Ala Asp Arg Asp Val Trp Lys Pro Glu
        35                  40                  45
Pro Cys Gln Ile Cys Val Cys Asp Ser Gly Ser Val Leu Cys Asp Asp
    50                  55                  60
Ile Ile Cys Asp Asp Gln Glu Leu Asp Cys Pro Asn Pro Glu Ile Pro
65                  70                  75                  80
Phe Gly Glu Cys Cys Ala Val Cys Pro Gln Pro Pro Thr Ala Pro Thr
                85                  90                  95
Arg Pro Pro Asn Gly Gln Gly Pro Gln Gly Pro Lys Gly Asp Pro Gly
            100                 105                 110
Pro Pro Gly Ile Pro Gly Arg Asn Gly Asp Pro Gly Ile Pro Gly Gln
        115                 120                 125
Pro Gly Ser Pro Gly Ser Pro Gly Pro Pro Gly Ile Cys Glu Ser Cys
    130                 135                 140
Pro Thr Gly Pro Gln Asn Tyr Ser Pro Gln Tyr Asp Ser Tyr Asp Val
145                 150                 155                 160
Lys Ser Gly Val Ala Val Gly Gly Leu Ala Gly Tyr Pro Gly Pro Ala
                165                 170                 175
Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Thr Ser Gly His Pro Gly
            180                 185                 190
Ser Pro Gly Ser Pro Gly Tyr Gln Gly Pro Pro Gly Glu Pro Gly Gln
        195                 200                 205
Ala Gly Pro Ser Gly Pro Pro Gly Pro Pro Gly Ala Ile Gly Pro Ser
    210                 215                 220
Gly Pro Ala Gly Lys Asp Gly Glu Ser Gly Arg Pro Gly Arg Pro Gly
225                 230                 235                 240
Glu Arg Gly Leu Pro Gly Pro Pro Gly Ile Lys Gly Pro Ala Gly Ile
                245                 250                 255
Pro Gly Phe Pro Gly Met Lys Gly His Arg Gly Phe Asp Gly Arg Asn
            260                 265                 270
Gly Glu Lys Gly Glu Thr Gly Ala Pro Gly Leu Lys Gly Glu Asn Gly
        275                 280                 285
Leu Pro Gly Glu Asn Gly Ala Pro Gly Pro Met Gly Pro Arg Gly Ala
    290                 295                 300
Pro Gly Glu Arg Gly Arg Pro Gly Leu Pro Gly Ala Ala Gly Ala Arg
305                 310                 315                 320
Gly Asn Asp Gly Ala Arg Gly Ser Asp Gly Gln Pro Gly Pro Pro Gly
                325                 330                 335
Pro Pro Gly Thr Ala Gly Phe Pro Gly Ser Pro Gly Ala Lys Gly Glu
            340                 345                 350
Val Gly Pro Ala Gly Ser Pro Gly Ser Asn Gly Ala Pro Gly Gln Arg
        355                 360                 365
Gly Glu Pro Gly Pro Gln Gly His Ala Gly Ala Gln Gly Pro Pro Gly
    370                 375                 380
Pro Pro Gly Ile Asn Gly Ser Pro Gly Gly Lys Gly Glu Met Gly Pro
```

385 390 395 400
Ala Gly Ile Pro Gly Ala Pro Gly Leu Met Gly Ala Arg Gly Pro Pro
405 410 415
Gly Pro Ala Gly Ala Asn Gly Ala Pro Gly Leu Arg Gly Gly Ala Gly
420 425 430
Glu Pro Gly Lys Asn Gly Ala Lys Gly Glu Pro Gly Pro Arg Gly Glu
435 440 445
Arg Gly Glu Ala Gly Ile Pro Gly Val Pro Gly Ala Lys Gly Glu Asp
450 455 460
Gly Lys Asp Gly Ser Pro Gly Glu Pro Gly Ala Asn Gly Leu Pro Gly
465 470 475 480
Ala Ala Gly Glu Arg Gly Ala Pro Gly Phe Arg Gly Pro Ala Gly Pro
485 490 495
Asn Gly Ile Pro Gly Glu Lys Gly Pro Ala Gly Glu Arg Gly Ala Pro
500 505 510
Gly Pro Ala Gly Pro Arg Gly Ala Ala Gly Glu Pro Gly Arg Asp Gly
515 520 525
Val Pro Gly Gly Pro Gly Met Arg Gly Met Pro Gly Ser Pro Gly Gly
530 535 540
Pro Gly Ser Asp Gly Lys Pro Gly Pro Pro Gly Ser Gln Gly Glu Ser
545 550 555 560
Gly Arg Pro Gly Pro Pro Gly Pro Ser Gly Pro Arg Gly Gln Pro Gly
565 570 575
Val Met Gly Phe Pro Gly Pro Lys Gly Asn Asp Gly Ala Pro Gly Lys
580 585 590
Asn Gly Glu Arg Gly Gly Pro Gly Gly Pro Gly Pro Gln Gly Pro Pro
595 600 605
Gly Lys Asn Gly Glu Thr Gly Pro Gln Gly Pro Pro Gly Pro Thr Gly
610 615 620
Pro Gly Gly Asp Lys Gly Asp Thr Gly Pro Pro Gly Pro Gln Gly Leu
625 630 635 640
Gln Gly Leu Pro Gly Thr Gly Gly Pro Pro Gly Glu Asn Gly Lys Pro
645 650 655
Gly Glu Pro Gly Pro Lys Gly Asp Ala Gly Ala Pro Gly Ala Pro Gly
660 665 670
Gly Lys Gly Asp Ala Gly Ala Pro Gly Glu Arg Gly Pro Pro Gly Leu
675 680 685
Ala Gly Ala Pro Gly Leu Arg Gly Gly Ala Gly Pro Pro Gly Pro Glu
690 695 700
Gly Gly Lys Gly Ala Ala Gly Pro Pro Gly Pro Pro Gly Ala Ala Gly
705 710 715 720
Thr Pro Gly Leu Gln Gly Met Pro Gly Glu Arg Gly Gly Leu Gly Ser
725 730 735
Pro Gly Pro Lys Gly Asp Lys Gly Glu Pro Gly Gly Pro Gly Ala Asp
740 745 750
Gly Val Pro Gly Lys Asp Gly Pro Arg Gly Pro Thr Gly Pro Ile Gly
755 760 765
Pro Pro Gly Pro Ala Gly Gln Pro Gly Asp Lys Gly Glu Gly Gly Ala
770 775 780
Pro Gly Leu Pro Gly Ile Ala Gly Pro Arg Gly Ser Pro Gly Glu Arg
785 790 795 800
Gly Glu Thr Gly Pro Pro Gly Pro Ala Gly Phe Pro Gly Ala Pro Gly
805 810 815
Gln Asn Gly Glu Pro Gly Gly Lys Gly Glu Arg Gly Ala Pro Gly Glu
820 825 830
Lys Gly Glu Gly Gly Pro Pro Gly Val Ala Gly Pro Pro Gly Gly Ser
835 840 845
Gly Pro Ala Gly Pro Pro Gly Pro Gln Gly Val Lys Gly Glu Arg Gly
850 855 860
Ser Pro Gly Gly Pro Gly Ala Ala Gly Phe Pro Gly Ala Arg Gly Leu
865 870 875 880

Pro Gly Pro Pro Gly Ser Asn Gly Asn Pro Gly Pro Pro Gly Pro Ser
885 890 895
Gly Ser Pro Gly Lys Asp Gly Pro Pro Gly Pro Ala Gly Asn Thr Gly
900 905 910
Ala Pro Gly Ser Pro Gly Val Ser Gly Pro Lys Gly Asp Ala Gly Gln
915 920 925
Pro Gly Glu Lys Gly Ser Pro Gly Ala Gln Gly Pro Pro Gly Ala Pro
930 935 940
Gly Pro Leu Gly Ile Ala Gly Ile Thr Gly Ala Arg Gly Leu Ala Gly
945 950 955 960
Pro Pro Gly Met Pro Gly Pro Arg Gly Ser Pro Gly Pro Gln Gly Val
965 970 975
Lys Gly Glu Ser Gly Lys Pro Gly Ala Asn Gly Leu Ser Gly Glu Arg
980 985 990
Gly Pro Pro Gly Pro Gln Gly Leu Pro Gly Leu Ala Gly Thr Ala Gly
995 1000 1005
Glu Pro Gly Arg Asp Gly Asn Pro Gly Ser Asp Gly Leu Pro Gly Arg
1010 1015 1020
Asp Gly Ser Pro Gly Gly Lys Gly Asp Arg Gly Glu Asn Gly Ser Pro
1025 1030 1035 1040
Gly Ala Pro Gly Ala Pro Gly His Pro Gly Pro Pro Gly Pro Val Gly
1045 1050 1055
Pro Ala Gly Lys Ser Gly Asp Arg Gly Glu Ser Gly Pro Ala Gly Pro
1060 1065 1070
Ala Gly Ala Pro Gly Pro Ala Gly Ser Arg Gly Ala Pro Gly Pro Gln
1075 1080 1085
Gly Pro Arg Gly Asp Lys Gly Glu Thr Gly Glu Arg Gly Ala Ala Gly
1090 1095 1100
Ile Lys Gly His Arg Gly Phe Pro Gly Asn Pro Gly Ala Pro Gly Ser
1105 1110 1115 1120
Pro Gly Pro Ala Gly Gln Gln Gly Ala Ile Gly Ser Pro Gly Pro Ala
1125 1130 1135
Gly Pro Arg Gly Pro Val Gly Pro Ser Gly Pro Pro Gly Lys Asp Gly
1140 1145 1150
Thr Ser Gly His Pro Gly Pro Ile Gly Pro Pro Gly Pro Arg Gly Asn
1155 1160 1165
Arg Gly Glu Arg Gly Ser Glu Gly Ser Pro Gly His Pro Gly Gln Pro
1170 1175 1180
Gly Pro Pro Gly Pro Pro Gly Ala Pro Gly Pro Cys Cys Gly Gly Val
1185 1190 1195 1200
Gly Ala Ala Ala Ile Ala Gly Ile Gly Gly Glu Lys Ala Gly Gly Phe
1205 1210 1215
Ala Pro Tyr Tyr Gly Asp Glu Pro Met Asp Phe Lys Ile Asn Thr Asp
1220 1225 1230
Glu Ile Met Thr Ser Leu Lys Ser Val Asn Gly Gln Ile Glu Ser Leu
1235 1240 1245
Ile Ser Pro Asp Gly Ser Arg Lys Asn Pro Ala Arg Asn Cys Arg Asp
1250 1255 1260
Leu Lys Phe Cys His Pro Glu Leu Lys Ser Gly Glu Tyr Trp Val Asp
1265 1270 1275 1280
Pro Asn Gln Gly Cys Lys Leu Asp Ala Ile Lys Val Phe Cys Asn Met
1285 1290 1295
Glu Thr Gly Glu Thr Cys Ile Ser Ala Asn Pro Leu Asn Val Pro Arg
1300 1305 1310
Lys His Trp Trp Thr Asp Ser Ser Ala Glu Lys Lys His Val Trp Phe
1315 1320 1325
Gly Glu Ser Met Asp Gly Gly Phe Gln Phe Ser Tyr Gly Asn Pro Glu
1330 1335 1340
Leu Pro Glu Asp Val Leu Asp Val Gln Leu Ala Phe Leu Arg Leu Leu
1345 1350 1355 1360
Ser Ser Arg Ala Ser Gln Asn Ile Thr Tyr His Cys Lys Asn Ser Ile

```
                1365                1370                1375
Ala Tyr Met Asp Gln Ala Ser Gly Asn Val Lys Lys Ala Leu Lys Leu
            1380                1385                1390
Met Gly Ser Asn Glu Gly Glu Phe Lys Ala Glu Gly Asn Ser Lys Phe
        1395                1400                1405
Thr Tyr Thr Val Leu Glu Asp Gly Cys Thr Lys His Thr Gly Glu Trp
    1410                1415                1420
Ser Lys Thr Val Phe Glu Tyr Arg Thr Arg Lys Ala Val Arg Leu Pro
1425                1430                1435                1440
Ile Val Asp Ile Ala Pro Tyr Asp Ile Gly Gly Pro Asp Gln Glu Phe
                1445                1450                1455
Gly Val Asp Val Gly Pro Val Cys Phe Leu
            1460                1465
```

<210> 227
<211> 6663
<212> DNA
<213> Homo sapiens

<400> 227

```
ccccgactag cccgacagtc cccgactagc ccgacagccc cagcaggatc tgcatcgtca      60
tcgagccggc ccagcttctg aagggagatg tcatggtgaa atgctaccac aagaaatacc     120
gctcggccac ccgtgacgtc attttccgcc tgcagtttca cactggggct gtgcagggct     180
acgggctggt gtttgggaag gaggatctgg acaatgccag caaagatgac cgttttcctg     240
actatgggaa ggttgaatta gtcttctctg ccacgcctga gaagattcaa gggtccgaac     300
acttgtacaa cgaccacggt gtgattgtgg actacaacac aacagaccca ctgatacgct     360
gggactcgta cgagaacctc agtgcagatg gagaagtgct acacacgcag ggccctgtcg     420
atggcagcct ttacgcgaag gtgaggaaga aaagctcctc ggatcctggc atcccaggtg     480
gcccccaggc aatcccggcc accaacagcc cagaccacag tgaccacacc ttgtctgtca     540
gcagtgactc cggccactct acagcctctg ccaggacgga taagacggaa gagcgcctgg     600
ccccaggaac caggaggggc ctgagtgccc aggagaaggc agagttggac cagctgctca     660
gtggctttgg cctggaagat cctggaagct ccctcaagga aatgactgat gctcgaagca     720
agtacagtgg gacccgccac gtggtgccag cccaggttca cgtgaatgga gacgctgctc     780
tgaaggatcg ggagacagac attctggatg acgagatgcc ccaccacgac ctgcacagtg     840
tggacagcct tgggaccctg tcctcctcgg aagggcctca gtcggcccac ctgggtccct     900
tcacctgcca caagagcagc cagaactcac tcctatctga cggttttggc agcaacgttg     960
gtgaagatcc gcagggcacc ctcgttccgg acctgggcct tggcatggac ggcccctatg    1020
agcgggagcg gacttttggg agtcgagagc ccaagcagcc ccagcccctg ctgagaaagc    1080
cctcagtgtc cgcccagatg caggcctatg ggcagagcag ctactccaca cagacctggg    1140
tgcgccagca gcagatggtt gtagctcacc agtatagctt cgccccagat ggggaggccc    1200
ggctggtgag ccgctgccct gcagacaatc ctggcctcgt ccaggcccag cccagagtgc    1260
cactcacccc cacccgaggg accagcagta gggtggctgt ccagaggggt gtaggcagtg    1320
ggccacatcc ccctgacaca cagcagccct ctcccagcaa agcgttcaaa cccaggtttc    1380
caggagacca ggttgtgaat ggagccggcc cagagctgag cacaggcccc tccccaggct    1440
cgcccaccct ggacatcgac cagtccatcg agcagctcaa caggctgatc ctggagctgg    1500
atcccacctt cgagcccatc cctacccaca tgaacgccct cggtagccag gccaatggct    1560
ctgtgtctcc agacagcgtg ggaggtgggc tccgggcaag cagcaggctg cctgacacag    1620
gagagggccc cagcagggcc accgggcggc aaggctcctc tgctgaacag cccctgggcg    1680
ggagactcag gaagctgagc ctggggcagt acgacaacga tgctgggggg cagctgccct    1740
tctccaaatg tgcatgggga aaggctggtg tggactatgc cccaaacctg ccgccattcc    1800
cctcaccagc ggacgtcaaa gagacgatga cccctggcta tccccaggac ctcgatatta    1860
tcgatggcag aattttaagt agcaaggagt ccatgtgttc aactccagca tttcctgtgt    1920
ctccagagac accgtatgtg aaaacagcgc tgcgccatcc tccgttcagc ccacctgagc    1980
ccccgctgag cagcccagcc agtcagcaca aaggaggacg tgaaccacga agctgccctg    2040
agacgctcac tcacgctgtg gggatgtcag agagccccat cggacccaaa tccacgatgc    2100
tccgggctga tgcgtcctcg acgccctcct ttcagcaggc ttttgcttct tcctgcacca    2160
tttccagcaa cggccctggg cagaggagag agagctcctc ttctgcagaa cgccagtggg    2220
tggagagcag ccccaagccc atggtttccc tgctggggag cggccggccc accggaagtc    2280
ccctcagcgc tgagttctcc ggtaccagga aggactcccc agtgctgtcc tgcttcccgc    2340
cgtcagagct ccaggctcct ttccacagcc atgagctgtc cctagcagag ccaccggact    2400
ccctggcgcc tcccagcagc caggccttcc tgggcttcgg caccgcccca gtgggaagtg    2460
```

gccttccgcc cgaggaggac ctgggggcct tgctggccaa ttctcatgga gcgtcaccga 2520
cccccagcat cccgctgaca gcgacagggg ctgccgacaa tggcttcctg tcccacaact 2580
ttctcacggt ggcgcctgga cacagcagcc accacagtcc aggcctgcag ggccagggtg 2640
tgaccctgcc cgggcagcca cccctccctg agaagaagcg ggcctcggag ggggatcgtt 2700
ctttgggctc agtctctccc tcctccagtg gcttctccag cccgcacagc gggagcacca 2760
tcagtatccc cttcccaaat gtccttcccg acttttccaa ggcttcagaa gcggcctcac 2820
ctctgccaga tagtccaggt gataaacttg tgatcgtgaa atttgttcaa gacacttcca 2880
agttctggta caaggcggat atttcaagag aacaagccat cgccattgtg aaggacaagg 2940
agccgggctc attcattgtt cgagacagcc attccttccg aggggcctat ggcctggcca 3000
tgaaggtggc cacgccccca ccttcagtcc tgcagctgaa caagaaagct ggagatttgg 3060
ccaatgaact cgtccggcac tttttgatcg agtgtacccc gaagggagtg cggttgaaag 3120
ggtgctcgaa tgaaccatat ttcgggagcc tgacggcctt ggtgtgccag cattccatca 3180
cgcccttggc cttgccgtgc aagctgctta tcccagagag agatccattg gaggaaatag 3240
cagaaagttc tccccagacg gcagccaatt cagcagctga gctgttgaag caggggcag 3300
cctgcaacgt gtggtacttg aactctgtgg agatggagtc cctcaccggc caccaggcga 3360
tccagaaggc cctgagcatc accctggtcc aggagcctcc acctgtgtcc acagttgtgc 3420
acttcaaggt gtcagcccag ggcatcaccc tgacagacaa tcagaggaag ctcttcttcc 3480
ggaggcatta ccccgtgaac agtgtgattt tctgtgcctt ggacccacaa gacaggaagt 3540
ggatcaaaga tggcccttcc tcaaaagtct ttggatttgt ggcccggaag cagggcagtg 3600
ccacggataa tgtgtgccac ctgtttgcag agcatgaccc tgagcagcct gccagtgcca 3660
ttgtcaactt cgtatcaaag gtcatgattg gttccccaaa gaaggtctga gaactcccct 3720
ccctccctgg acccaccgat gcctctcgaa gccctggaga cagccgttgg gtgagggtgg 3780
ggcccccact ttttaccaaa ctagtaaacc tgacattcca ggcccatgag gggaaagagg 3840
atcttccagc tctgcaaaaa caagaacaaa caacatcacc gtgaattggc ctttcctgaa 3900
agtgacttat ctgacacatc tctgtagcca catgcttttt gggtagaaga agctgggcat 3960
gggtgcaccc cacccctag ggtccccatg ggaaagggac atgcaaggaa acagcacaga 4020
acacgaggtg gtccccatgt ccctggcaca ctagcattcc gggggatgag gaatccccag 4080
cccttgaggc agaggtgccg agtgactgcc atgcttcgcc cgtccgcatg ggcgcttctg 4140
tccagctgca cccgaggccg ggggtttccc tcacctcggt cttcccaaga tggagatgct 4200
aacgaaactg agaaggggcc gtatgtttga cgaaggtttg tgcaagtcag gcccttctgg 4260
aacacagcag ggcctacaac gaggggcctt tgcgatgggc tgtgaggatg ggggtggtgg 4320
gaagaattgg ccacgttaga gaccccatgc caccccacca tggtgagtgc tctgtgcctc 4380
ctgctcacct gtggtgagct gggcgagctg ggcgagctgg gcgagctggg ctggggagag 4440
cctgtgagga ccgagaggag aaatgagaag aaggaacaaa aatattattt ctatgtaatt 4500
tatattttac ttatgccaaa ttatttatga taatttgcca ttgctatact gtaccagtgt 4560
caaatgctgc agcctgccaa gctgtgattt tgtgaggctt gtccctatgt aggatgcacc 4620
gcaggcccct ggccactgaa agagtgtgca gtggactgtg ggtctcccat atgcggtgcc 4680
gcccaaaggt ggctttgcct caagcaacct accctgatgt tttactcatt ggaatgtttt 4740
tccccgattg tggatgactt cttttctgat ggagagagtc caggagggat ggaaaactcc 4800
tggatttaag ctcagcatcc cccacatggg cttttcgatc atcttcaggc ctgaagctgc 4860
acgacctgaa gttcgcctgc atttatcagc cctctttgtg ctgctccttg ccaccttggg 4920
gttcctgctg gggaccatgt gtggttgtgg catgtgtgag cagaagggag gatgaggaaa 4980
aagagaagaa accccggtac tgacaagctg tttttgagtg ccactgtttg ccatcatcta 5040
agccactgaa tcaagtgtat ttcaggctta tttcaacatt ccaatgccct ggttttcctg 5100
cttgaatctg ttcgtggtca aaggtttggg ggaatttgtg accctggaac atccccagag 5160
tgaaagatgg agctgggcca catcagaata aggccttggc cccatcctct cacagcctag 5220
gtgctctgca ggcatgctga ctgtcctgat tgcgatccag cccgaaattc cctcctctgc 5280
tttcaaaagt caaatccccc attcttaggc cacactggtg tcacaagctc ctgtcaggga 5340
gctggggttt gggaatgtgc tttgtgaact ctgctttaaa gtgaggggcc gaggaaaact 5400
tagaaacagg cagagttgga agcagccaaa tcacagtggg tgttgtgtgt gtgtgcgtgt 5460
gtgcatgcgt gcgtgtatgc gtgtgtgaaa gcaggtggac cattccactt tttagctcct 5520
attgatgcac caaaccaagt gcctcatttc tgtgccaaat gtttgccttg gtcgttgtgg 5580
acctccttct ctaacttgcg gtggcatgac tgtcaggagg tgctggcatt ttcagcagat 5640
cctcatgtgt tgaccctgat gtctttagca gaggcctcta gcatctcggt ttttcatcca 5700
ctgcaggaat gtggccacag ggagcagagg tttgtacttt ccccaagagg tcctcatcct 5760
gagacggtct ctacccatgt ttaacccaaa gagtgcaggc caggttcctt atccttctga 5820
tgaaggatga gagagctcat ttagaagtca gagcaaacta gggtctcagt attgagaaac 5880
gcagcctgcc agggaatcac agagacatcg gggtgcccgc gatggccctc atgaagccat 5940
gcctcgacgg cattcaggaa gccctgcaaa cgtgcttttt gaactcattg gccaggtgtg 6000
atttttacac aaggtaaacg tggtcaaggg catcggggaa tttgctccaa gcagatagct 6060
ccctctgagg aaccaaagga agcaagtttc cacgatttct gaagagctgg tataggaagt 6120

```
ttctttcttc cttttgtgtt acatgtgcat taaacagaac aagctgtgtg tcatcacaga    6180
ttgtactgtg ggctcagaaa ccgtgagaga gcccccaccg tggacaccgg ctctagggcc    6240
acaggaaaag gaacgtttcc aggcattttg tctccagggc tcccgctgga caggcacgta    6300
ctgccctggg gagtaaatgc ggagagttca cgaactgtgc ccaacgcatg ttatagccag    6360
ggtcctacta actactcagt aaaagaacgt attgttgtat tcctccagtg ttaagctata    6420
gccatgttaa aagtcactgt gcatttattc tcagcatcaa ataccttgta acgtcttctc    6480
tgccttgtta gtgcatattt ttacttttct gatactgtaa agaatatatc cagtatgtaa    6540
atgaatgttc tataaatctt ttgtatagtc attttctctg ctccttaaat atcatctcta    6600
ttcagagtat aataaaatta tgaacttggt aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa    6660
aaa                                                                 6663
```

<210> 228
<211> 1202
<212> PRT
<213> Homo sapiens

<400> 228

```
Met Val Lys Cys Tyr His Lys Lys Tyr Arg Ser Ala Thr Arg Asp Val
 1               5                  10                  15
Ile Phe Arg Leu Gln Phe His Thr Gly Ala Val Gln Gly Tyr Gly Leu
            20                  25                  30
Val Phe Gly Lys Glu Asp Leu Ser Lys Asp Asp Arg Phe Pro Asp Tyr
        35                  40                  45
Gly Lys Val Glu Leu Val Phe Ser Ala Thr Pro Glu Lys Ile Gln Gly
    50                  55                  60
Ser Glu His Leu Tyr Asn Asp His Gly Val Ile Val Asp Tyr Asn Thr
65                  70                  75                  80
Thr Asp Pro Leu Ile Arg Trp Asp Ser Tyr Glu Asn Leu Ser Ala Asp
                85                  90                  95
Gly Glu Val Leu His Thr Gln Gly Pro Val Asp Gly Ser Leu Tyr Ala
            100                 105                 110
Lys Val Arg Lys Lys Ser Ser Ser Asp Pro Gly Ile Pro Gly Gly Pro
        115                 120                 125
Gln Ala Ile Pro Ala Thr Asn Ser Pro Asp His Ser Asp His Thr Leu
    130                 135                 140
Ser Val Ser Ser Asp Ser Gly His Ser Thr Ala Ser Ala Arg Thr Asp
145                 150                 155                 160
Lys Thr Glu Glu Arg Leu Ala Pro Gly Thr Arg Arg Gly Leu Ser Ala
                165                 170                 175
Gln Glu Lys Ala Glu Leu Asp Gln Leu Leu Ser Gly Phe Gly Leu Glu
            180                 185                 190
Asp Pro Gly Ser Ser Leu Lys Glu Met Thr Asp Ala Arg Ser Lys Tyr
        195                 200                 205
Ser Gly Thr Arg His Val Val Pro Ala Gln Val His Val Asn Gly Asp
    210                 215                 220
Ala Ala Leu Lys Asp Arg Glu Thr Asp Ile Leu Asp Asp Glu Met Pro
225                 230                 235                 240
His His Asp Leu His Ser Val Asp Ser Leu Gly Thr Leu Ser Ser Ser
                245                 250                 255
Glu Gly Pro Gln Ser Ala His Leu Gly Pro Phe Thr Cys His Lys Ser
            260                 265                 270
Ser Gln Asn Ser Leu Leu Ser Asp Gly Phe Gly Ser Asn Val Gly Glu
        275                 280                 285
Asp Pro Gln Gly Thr Leu Val Pro Asp Leu Gly Leu Gly Met Asp Gly
    290                 295                 300
Pro Tyr Glu Arg Glu Arg Thr Phe Gly Ser Arg Glu Pro Lys Gln Pro
305                 310                 315                 320
Gln Pro Leu Leu Arg Lys Pro Ser Val Ser Ala Gln Met Gln Ala Tyr
                325                 330                 335
```

Gly Gln Ser Ser Tyr Ser Thr Gln Thr Trp Val Arg Gln Gln Gln Met
340 345 350
Val Val Ala His Gln Tyr Ser Phe Ala Pro Asp Gly Glu Ala Arg Leu
355 360 365
Val Ser Arg Cys Pro Ala Asp Asn Pro Gly Leu Val Gln Ala Gln Pro
370 375 380
Arg Val Pro Leu Thr Pro Thr Arg Gly Thr Ser Ser Arg Val Ala Val
385 390 395 400
Gln Arg Gly Val Gly Ser Gly Pro His Pro Pro Asp Thr Gln Gln Pro
405 410 415
Ser Pro Ser Lys Ala Phe Lys Pro Arg Phe Pro Gly Asp Gln Val Val
420 425 430
Asn Gly Ala Gly Pro Glu Leu Ser Thr Gly Pro Ser Pro Gly Ser Pro
435 440 445
Thr Leu Asp Ile Asp Gln Ser Ile Glu Gln Leu Asn Arg Leu Ile Leu
450 455 460
Glu Leu Asp Pro Thr Phe Glu Pro Ile Pro Thr His Met Asn Ala Leu
465 470 475 480
Gly Ser Gln Ala Asn Gly Ser Val Ser Pro Asp Ser Val Gly Gly Gly
485 490 495
Leu Arg Ala Ser Ser Arg Leu Pro Asp Thr Gly Glu Gly Pro Ser Arg
500 505 510
Ala Thr Gly Arg Gln Gly Ser Ser Ala Glu Gln Pro Leu Gly Gly Arg
515 520 525
Leu Arg Lys Leu Ser Leu Gly Gln Tyr Asp Asn Asp Ala Gly Gly Gln
530 535 540
Leu Pro Phe Ser Lys Cys Ala Trp Gly Lys Ala Gly Val Asp Tyr Ala
545 550 555 560
Pro Asn Leu Pro Pro Phe Pro Ser Pro Ala Asp Val Lys Glu Thr Met
565 570 575
Thr Pro Gly Tyr Pro Gln Asp Leu Asp Ile Ile Asp Gly Arg Ile Leu
580 585 590
Ser Ser Lys Glu Ser Met Cys Ser Thr Pro Ala Phe Pro Val Ser Pro
595 600 605
Glu Thr Pro Tyr Val Lys Thr Ala Leu Arg His Pro Pro Phe Ser Pro
610 615 620
Pro Glu Pro Pro Leu Ser Ser Pro Ala Ser Gln His Lys Gly Gly Arg
625 630 635 640
Glu Pro Arg Ser Cys Pro Glu Thr Leu Thr His Ala Val Gly Met Ser
645 650 655
Glu Ser Pro Ile Gly Pro Lys Ser Thr Met Leu Arg Ala Asp Ala Ser
660 665 670
Ser Thr Pro Ser Phe Gln Gln Ala Phe Ala Ser Ser Cys Thr Ile Ser
675 680 685
Ser Asn Gly Pro Gly Gln Arg Arg Glu Ser Ser Ser Ser Ala Glu Arg
690 695 700
Gln Trp Val Glu Ser Ser Pro Lys Pro Met Val Ser Leu Leu Gly Ser
705 710 715 720
Gly Arg Pro Thr Gly Ser Pro Leu Ser Ala Glu Phe Ser Gly Thr Arg
725 730 735
Lys Asp Ser Pro Val Leu Ser Cys Phe Pro Pro Ser Glu Leu Gln Ala
740 745 750
Pro Phe His Ser His Glu Leu Ser Leu Ala Glu Pro Pro Asp Ser Leu
755 760 765
Ala Pro Pro Ser Ser Gln Ala Phe Leu Gly Phe Gly Thr Ala Pro Val
770 775 780
Gly Ser Gly Leu Pro Pro Glu Glu Asp Leu Gly Ala Leu Leu Ala Asn
785 790 795 800
Ser His Gly Ala Ser Pro Thr Pro Ser Ile Pro Leu Thr Ala Thr Gly
805 810 815
Ala Ala Asp Asn Gly Phe Leu Ser His Asn Phe Leu Thr Val Ala Pro

```
            820                 825                 830
Gly His Ser Ser His His Ser Pro Gly Leu Gln Gly Gln Gly Val Thr
        835                 840                 845
Leu Pro Gly Gln Pro Pro Leu Pro Glu Lys Lys Arg Ala Ser Glu Gly
    850                 855                 860
Asp Arg Ser Leu Gly Ser Val Ser Pro Ser Ser Ser Gly Phe Ser Ser
865                 870                 875                 880
Pro His Ser Gly Ser Thr Ile Ser Ile Pro Phe Pro Asn Val Leu Pro
                885                 890                 895
Asp Phe Ser Lys Ala Ser Glu Ala Ala Ser Pro Leu Pro Asp Ser Pro
            900                 905                 910
Gly Asp Lys Leu Val Ile Val Lys Phe Val Gln Asp Thr Ser Lys Phe
        915                 920                 925
Trp Tyr Lys Ala Asp Ile Ser Arg Glu Gln Ala Ile Ala Met Leu Lys
    930                 935                 940
Asp Lys Glu Pro Gly Ser Phe Ile Val Arg Asp Ser His Ser Phe Arg
945                 950                 955                 960
Gly Ala Tyr Gly Leu Ala Met Lys Val Ala Thr Pro Pro Pro Ser Val
                965                 970                 975
Leu Gln Leu Asn Lys Lys Ala Gly Asp Leu Ala Asn Glu Leu Val Arg
            980                 985                 990
His Phe Leu Ile Glu Cys Thr Pro Lys Gly Val Arg Leu Lys Gly Cys
        995                 1000                1005
Ser Asn Glu Pro Tyr Phe Gly Ser Leu Thr Ala Leu Val Cys Gln His
    1010                1015                1020
Ser Ile Thr Pro Leu Ala Leu Pro Cys Lys Leu Leu Ile Pro Glu Arg
1025                1030                1035                1040
Asp Pro Leu Glu Glu Ile Ala Glu Ser Ser Pro Gln Thr Ala Ala Asn
                1045                1050                1055
Ser Ala Ala Glu Leu Leu Lys Gln Gly Ala Ala Cys Asn Val Trp Tyr
            1060                1065                1070
Leu Asn Ser Val Glu Met Glu Ser Leu Thr Gly His Gln Ala Ile Gln
        1075                1080                1085
Lys Ala Leu Ser Ile Thr Leu Val Gln Glu Pro Pro Pro Val Ser Thr
    1090                1095                1100
Val Val His Phe Lys Val Ser Ala Gln Gly Ile Thr Leu Thr Asp Asn
1105                1110                1115                1120
Gln Arg Lys Leu Phe Phe Arg Arg His Tyr Pro Val Asn Ser Val Ile
                1125                1130                1135
Phe Cys Ala Leu Asp Pro Gln Asp Arg Lys Trp Ile Lys Asp Gly Pro
            1140                1145                1150
Ser Ser Lys Val Phe Gly Phe Val Ala Arg Lys Gln Gly Ser Ala Thr
        1155                1160                1165
Asp Asn Val Cys His Leu Phe Ala Glu His Asp Pro Glu Gln Pro Ala
    1170                1175                1180
Ser Ala Ile Val Asn Phe Val Ser Lys Val Met Ile Gly Ser Pro Lys
1185                1190                1195                1200
Lys Val
```

<210> 229
<211> 2320
<212> DNA
<213> Homo sapiens

<400> 229

```
gcggccgcag cctgagccag ggccccctcc ctcgtcagga ccggggcagc aagcaggccg      60
ggggcaggtc cgggcaccca ccatgcgagg cgagctctgg ctcctggtgc tggtgctcag     120
ggaggctgcc cgggcgctga gcccccagcc cggagcaggt cacgatgagg gcccaggctc     180
tggatgggct gccaaaggga ccgtgcgggg ctggaaccgg agagcccgag agagccctgg     240
gcatgtgtca gagccggaca ggacccagct gagccaggac ctgggtgggg gcaccctggc     300
```

```
catggacacg ctgccagata acaggaccag ggtggtggag gacaaccaca gctattatgt      360
gtcccgtctc tatggcccca gcgagcccca cagccgggaa ctgtgggtag atgtggccga      420
ggccaaccgg agccaagtga agatccacac aatactctcc aacacccacc ggcaggcttc      480
gagagtggtc ttgtcctttg atttcccttt ctacgggcat cctctgcggc agatcaccat      540
agcaactgga ggcttcatct tcatggggga cgtgatccat cggatgctca cagctactca      600
gtatgtggcg cccctgatgg ccaacttcaa ccctggctac tccgacaact ccacagttgt      660
ttactttgac aatgggacag tctttgtggt tcagtgggac cacgtttatc tccaaggctg      720
ggaagacaag ggcagtttca ccttccaggc agctctgcac catgacggcc gcattgtctt      780
tgcctataaa gagatcccta tgtctgtccc ggaaatcagc tcctcccagc atcctgtcaa      840
aaccggccta tcggatgcct tcatgattct caatccatcc ccggatgtgc cagaatctcg      900
gcgaaggagc atctttgaat accaccgcat agagctggac cccagcaagg tcaccagcat      960
gtcggccgtg gagttcaccc cattgccgac ctgcctgcag cataggagct gtgacgcctg     1020
catgtcctca gacctgacct tcaactgcag ctggtgccat gtcctccaga gatgctccag     1080
tggctttgac cgctatcgcc aggagtggat ggactatggc tgtgcacagg aggcagaggg     1140
caggatgtgc gaggacttcc aggatgagga ccacgactca gcctcccctg acacttcctt     1200
cagcccctat gatggagacc tcaccactac ctcctcctcc ctcttcatcg acagcctcac     1260
cacagaagat gacaccaagt tgaatcccta tgcaggagga gacggccttc agaacaacct     1320
gtcccccaag acaaagggca ctcctgtgca cctgggcacc atcgtgggca tcgtgctggc     1380
agtcctcctc gtggcggcca tcatcctggc tggaatttac atcaatggcc accccacatc     1440
caatgctgcg ctcttcttca tcgagcgtag acctcaccac tggccagcca tgaagtttcg     1500
cagccaccct gaccattcca cctatgcgga ggtggagccc tcgggccatg agaaggaggg     1560
cttcatggag gctgagcagt gctgagaaca ccaagtctcc cctttgaaga ctttgaggcc     1620
acagaaaaga cagttaaagc aaagaagaga agtgactttt cctggcctct cccagcatgc     1680
cctgggctga gatgagatgg tggtttatgg ctccagagct gctgttcgct tcgtcagcac     1740
accccgaata ttgaagaggg ggccaaaaaa caaccacatg gatttttat aggaacaaca      1800
acctaatctc atcctgtttt gatgcaaggg ttctcttctg tgtcttgtaa ccatgaaaca     1860
gcagaagaac taacataact aactccattt ttgtttaagg ggcctttacc tattcctgca     1920
cctaggctag gataacttta gagcactgac ataaaacgca aaaacaggaa tcatgccgtt     1980
tgcaaaacta actctgggat taaaggggaa gcatgtaaac agctaactgt ttttgttaaa     2040
gatttatagg aatgaggagg tttggctatt gtcacatgac agactgttag ccaaggacaa     2100
agaagttctg caaacctccc ctggaccctt gctggtgtcc agatgtctgc ggttgtcagc     2160
cccttccttt cccccgacct aaacataaaa gacaaggcaa agcccgcata attttaagac     2220
ggttctttag gacattagtc caccatcttc ttggtttgct ggctctccga aataaagtcc     2280
ctttccttgc tccaaaaaaa aaaaaaaaaa aaaaaaaaaa                           2320
```

<210> 230
<211> 500
<212> PRT
<213> Homo sapiens

<400> 230

```
Met Arg Gly Glu Leu Trp Leu Leu Val Leu Val Leu Arg Glu Ala Ala
 1               5                  10                  15
Arg Ala Leu Ser Pro Gln Pro Gly Ala Gly His Asp Glu Gly Pro Gly
            20                  25                  30
Ser Gly Trp Ala Ala Lys Gly Thr Val Arg Gly Trp Asn Arg Arg Ala
        35                  40                  45
Arg Glu Ser Pro Gly His Val Ser Glu Pro Asp Arg Thr Gln Leu Ser
    50                  55                  60
Gln Asp Leu Gly Gly Gly Thr Leu Ala Met Asp Thr Leu Pro Asp Asn
65                  70                  75                  80
Arg Thr Arg Val Val Glu Asp Asn His Ser Tyr Tyr Val Ser Arg Leu
                85                  90                  95
Tyr Gly Pro Ser Glu Pro His Ser Arg Glu Leu Trp Val Asp Val Ala
            100                 105                 110
Glu Ala Asn Arg Ser Gln Val Lys Ile His Thr Ile Leu Ser Asn Thr
        115                 120                 125
His Arg Gln Ala Ser Arg Val Val Leu Ser Phe Asp Phe Pro Phe Tyr
    130                 135                 140
Gly His Pro Leu Arg Gln Ile Thr Ile Ala Thr Gly Gly Phe Ile Phe
145                 150                 155                 160
```

```
Met Gly Asp Val Ile His Arg Met Leu Thr Ala Thr Gln Tyr Val Ala
                165                 170                 175
Pro Leu Met Ala Asn Phe Asn Pro Gly Tyr Ser Asp Asn Ser Thr Val
            180                 185                 190
Val Tyr Phe Asp Asn Gly Thr Val Phe Val Val Gln Trp Asp His Val
        195                 200                 205
Tyr Leu Gln Gly Trp Glu Asp Lys Gly Ser Phe Thr Phe Gln Ala Ala
    210                 215                 220
Leu His His Asp Gly Arg Ile Val Phe Ala Tyr Lys Glu Ile Pro Met
225                 230                 235                 240
Ser Val Pro Glu Ile Ser Ser Ser Gln His Pro Val Lys Thr Gly Leu
                245                 250                 255
Ser Asp Ala Phe Met Ile Leu Asn Pro Ser Pro Asp Val Pro Glu Ser
            260                 265                 270
Arg Arg Arg Ser Ile Phe Glu Tyr His Arg Ile Glu Leu Asp Pro Ser
        275                 280                 285
Lys Val Thr Ser Met Ser Ala Val Glu Phe Thr Pro Leu Pro Thr Cys
    290                 295                 300
Leu Gln His Arg Ser Cys Asp Ala Cys Met Ser Ser Asp Leu Thr Phe
305                 310                 315                 320
Asn Cys Ser Trp Cys His Val Leu Gln Arg Cys Ser Ser Gly Phe Asp
                325                 330                 335
Arg Tyr Arg Gln Glu Trp Met Asp Tyr Gly Cys Ala Gln Glu Ala Glu
            340                 345                 350
Gly Arg Met Cys Glu Asp Phe Gln Asp Glu Asp His Asp Ser Ala Ser
        355                 360                 365
Pro Asp Thr Ser Phe Ser Pro Tyr Asp Gly Asp Leu Thr Thr Thr Ser
    370                 375                 380
Ser Ser Leu Phe Ile Asp Ser Leu Thr Thr Glu Asp Asp Thr Lys Leu
385                 390                 395                 400
Asn Pro Tyr Ala Gly Gly Asp Gly Leu Gln Asn Asn Leu Ser Pro Lys
                405                 410                 415
Thr Lys Gly Thr Pro Val His Leu Gly Thr Ile Val Gly Ile Val Leu
            420                 425                 430
Ala Val Leu Leu Val Ala Ala Ile Ile Leu Ala Gly Ile Tyr Ile Asn
        435                 440                 445
Gly His Pro Thr Ser Asn Ala Ala Leu Phe Phe Ile Glu Arg Arg Pro
    450                 455                 460
His His Trp Pro Ala Met Lys Phe Arg Ser His Pro Asp His Ser Thr
465                 470                 475                 480
Tyr Ala Glu Val Glu Pro Ser Gly His Glu Lys Glu Gly Phe Met Glu
                485                 490                 495
Ala Glu Gln Cys
            500
```

<210> 231
<211> 5540
<212> DNA
<213> Homo sapiens

<400> 231

```
aattgcttcc ggggagttgc gagggagcga gggggaataa aggacccgcg aggaagggcc      60
cgcggatggc gcgtccctga gggtcgtggc gagttcgcgg agcgtgggaa ggagcggacc     120
ctgctctccc cgggctgcgg gccatggcca cggcggagcg gagagccctc ggcatcggct     180
tccagtggct ctctttggcc actctggtgc tcatctgcgc cgggcaaggg ggacgcaggg     240
aggatggggg tccagcctgc tacggcggat ttgacctgta cttcattttg gacaaatcag     300
gaagtgtgct gcaccactgg aatgaaatct attactttgt ggaacagttg gctcacaaat     360
tcatcagccc acagttgaga atgtccttta ttgttttctc cacccgagga acaaccttaa     420
tgaaactgac agaagacaga gaacaaatcc gtcaaggcct agaagaactc cagaaagttc     480
tgccaggagg agacacttac atgcatgaag gatttgaaag ggccagtgag cagatttatt     540
atgaaaacag acaagggtac aggacagcca gcgtcatcat tgctttgact gatggagaac     600
```

tccatgaaga tctctttttc tattcagaga gggaggctaa taggtctcga gatcttggtg 660
caattgttta ctgtgttggt gtgaaagatt tcaatgagac acagctggcc cggattgcgg 720
acagtaagga tcatgtgttt cccgtgaatg acggctttca ggctctgcaa ggcatcatcc 780
actcaatttt gaagaagtcc tgcatcgaaa ttctagcagc tgaaccatcc accatatgtg 840
caggagagtc atttcaagtt gtcgtgagag gaaacggctt ccgacatgcc cgcaacgtgg 900
acagggtcct ctgcagcttc aagatcaatg actcggtcac actcaatgag aagccctttt 960
ctgtggaaga tacttattta ctgtgtccag cgcctatctt aaaagaagtt ggcatgaaag 1020
ctgcactcca ggtcagcatg aacgatggcc tctcttttat ctccagttct gtcatcatca 1080
ccaccacaca ctgttctgac ggttccatcc tggccatcgc cctgctgatc ctgttcctgc 1140
tcctagccct ggctctcctc tggtggttct ggcccctctg ctgcactgtg attatcaagg 1200
aggtccctcc acccctgcc gaggagagtg aggaagaaga tgatgatggt ctgcctaaga 1260
aaaagtggcc aacggtagac gcctcttatt atggtgggag aggcgttgga ggcattaaaa 1320
gaatggaggt tcgttgggga gaaaagggct ccacagaaga aggtgctaag ttggaaaagg 1380
caaagaatgc aagagtcaag atgccggagc aggaatatga attccctgag ccgcgaaatc 1440
tcaacaacaa tatgcgtcgg ccttcttccc cccggaagtg gtactctcca atcaagggaa 1500
aactcgatgc cttgtgggtc ctactgagga aaggatatga tcgtgtgtct gtgatgcgtc 1560
cacagccagg agacacgggg cgctgcatca acttcaccag ggtcaagaac aaccagccag 1620
ccaagtaccc actcaacaac gcctaccaca cctcctcgcc gcctcctgcc cccatctaca 1680
ctcccccacc tcctgcgccc cactgccctc ccccgccccc cagcgccccc acccctccca 1740
tcccgtcccc accttccacc cttccccctc ctccccaggc tccacctccc aacagggcac 1800
ctcctccctc ccgccctcct ccaaggcctt ctgtctagag cccaaagttc ctgctctggg 1860
ctctctcaga aacttcagga gatgttagaa caagtctttc cagttagaga agaggagtgg 1920
tgataaagcc cactgacctt cacacattct aaaaattggt tggcaatgcc agtataccaa 1980
caatcatgat cagctgaaag aaacagatat tttaaattgc cagaaaacaa atgatgaggc 2040
aactacagtc agatttatag ccagccatct atcacctcta gaaggttcca gagacagtga 2100
aactgcaaga tgctctcaac aggattatgt ctcatggaga ccagtaagaa aatcatttat 2160
ctgaaggtga aatgcagagt tggataagaa atacattgct gggtttctaa aatgctgcct 2220
tcctgcctct actccacctc catccctgga ctttggaccc ttggcctagg agcctaagga 2280
ccttcacccc tgtgcaccac ccaagaaaga ggaaaacttt gcctacaact ttggaaatgc 2340
tggggtccct ggtgtggtaa gaaactcaac atcagacggg tatgcagaag gatgttcttc 2400
tgggatttgc aggtacataa aaaatgtatg gcatcttttc cttgcaaatt cttccagttt 2460
ccaagtgaga aggggagcag gtgtttactg atggaaaagg tatgttgcta tgttgatgtg 2520
taagtgaaat cagttgtgtg caatagacag gggcgtattc atgggagcat cagccagttt 2580
ctaaaaccca caggccatca gcagctagag gtggctggct ttggccagac atggacccta 2640
aatcaacaga caatggcatt gtcgaagagc aacctgttaa tgaatcatgt taaaaatcaa 2700
ggtttggctt cagtttaaat cacttgaggt atgaagttta tcctgttttc cagagataaa 2760
cataagttga tcttcccaaa ataccatcat taggacctat cacacaatat cactagtttt 2820
ttttgtttgt ttgttttttg ttttttttct tggtaaagcc atgcaccaca gacttctggg 2880
cagagctgag agacaatggt cctgacataa taaggatctt tgattaaccc ccataaggca 2940
tgtgtgtgta tacaaatata cttctctttg gcttttcgac atagaacctc agctgttaac 3000
caaggggaaa tacatcagat ctgcaacaca gaaatgctct gcctgaaatt tccaccatgc 3060
ctaggactca ccccatttat ccaggtcttt ctggatctgt ttaatcaata agccctataa 3120
tcacttgcta aacactgggc ttcatcaccc agggataaaa acagagatca ttgtcttgga 3180
cctcctgcat cagcctattc aaaattatct ctctctctag ctttccacaa atcctaaaat 3240
tcctgtccca agccacccaa attctcagat cttttctgga acaaggcaga atataaaata 3300
aatatacatt tagtggcttg ggctatggtc tccaaagatc cttcaaaaat acatcaagcc 3360
agcttcattc actcacttta cttagaacag agatataagg gcctgggatg catttatttt 3420
atcaatacca atttttgtgg ccatggcaga cattgctaat caatcacagc actatttcct 3480
attaagccca ctgatttctt cacaatcctt ctcaaattac aattccaaag agccgccact 3540
caacagtcag atgaacccaa cagtcagatg agagaaatga accctacttg ctatctctat 3600
cttagaaagc aaaaacaaac aggagtttcc agggagaatg ggaaagccag ggggcataaa 3660
aggtacagtc aggggaaaat agatctaggc agagtgcctt agtcagggac cacgggcgct 3720
gaatctgcag tgccaacacc aaactgacac atctccaggt gtacctccaa ccctagcctt 3780
ctcccacagc tgcctacaac agagtctccc agccttctca gagagctaaa accagaaatt 3840
tccagactca tgaaagcaac cccccagcct ctccccaacc ctgccgcatt gtctaatttt 3900
tagaacacta ggcttcttct ttcatgtagt tcctcataag caggggccag aatatctcag 3960
ccacctgcag tgacattgct ggacccctga aaaccattcc ataggagaat gggttcccca 4020
ggctcacagt gtagagacat tgagcccatc acaactgttt tgactgctgg cagtctaaaa 4080
cagtccaccc accccatggc actgccgcgt gattcccgcg gccattcaga agttcaagcc 4140
gagatgctga cgttgctgag caacgagatg gtgagcatca gtgcaaatgc accattcagc 4200
acatcagtca tatgcccagt gcagttacaa gatgttgttt cggcaaagca ttttgatgga 4260

```
atagggaact gcaaatgtat gatgattttg aaaaggctca gcaggatttg ttcttaaacc    4320
gactcagtgt gtcatccccg gttatttaga attacagtta agaaggagaa acttctataa    4380
gactgtatga acaaggtgat atcttcatag tgggctatta caggcaggaa aatgttttaa    4440
ctggtttaca aaatccatca atacttgtgt cattccctgt aaaaggcagg agacatgtga    4500
ttatgatcag gaaactgcac aaaattattg ttttcagccc ccgtgttatt gtccttttga    4560
actgtttttt ttttattaaa gccaaatttg tgttgtatat attcgtattc catgtgttag    4620
atggaagcat ttcctatcca gtgtgaataa aaagaacagt tgtagtaaat tattataaag    4680
ccgatgatat ttcatggcag gttattctac caagctgtgc ttgttggttt ttcccatgac    4740
tgtattgctt ttataaatgt acaaatagtt actgaaatga cgagaccctt gtttgcacag    4800
cattaataag aaccttgata agaaccatat tctgttgaca gccagctcac agtttcttgc    4860
ctgaagcttg gtgcaccctc cagtgagaca caagatctct cttttaccaa agttgagaac    4920
agagctggtg gattaattaa tagtcttcga tatctggcca tgggtaacct cattgtaact    4980
atcatcagaa tgggcagaga tgatcttgaa gtgtcacata cactaaagtc caaacactat    5040
gtcagatggg ggtaaaatcc attaaagaac aggaaaaaat aattataaga tgataagcaa    5100
atgtttcagc ccaatgtcaa cccagttaaa aaaaaaatta atgctgtgta aaatggttga    5160
attagtttgc aaactatata aagacatatg cagtaaaaag tctgttaatg cacatcctgt    5220
gggaatggag tgttctaacc aattgccttt tcttgttatc tgagctctcc tatattatca    5280
tactcagata accaaattaa aagaattaga atatgatttt taatacactt aacattaaac    5340
tcttctaact ttcttctttc tgtgataatt cagaagatag ttatggatct tcaatgcctc    5400
tgagtcattg ttataaaaaa tcagttatca ctataccatg ctataggaga ctgggcaaaa    5460
cctgtacaat gacaaccctg gaagttgctt tttttaaaaa aataataaat ttcttaaatc    5520
aaaaaaaaaa aaaaaaaaaa                                               5540
```

<210> 232
<211> 564
<212> PRT
<213> Homo sapiens

<400> 232

```
Met Ala Thr Ala Glu Arg Arg Ala Leu Gly Ile Gly Phe Gln Trp Leu
 1               5                  10                  15
Ser Leu Ala Thr Leu Val Leu Ile Cys Ala Gly Gln Gly Gly Arg Arg
            20                  25                  30
Glu Asp Gly Gly Pro Ala Cys Tyr Gly Gly Phe Asp Leu Tyr Phe Ile
        35                  40                  45
Leu Asp Lys Ser Gly Ser Val Leu His His Trp Asn Glu Ile Tyr Tyr
    50                  55                  60
Phe Val Glu Gln Leu Ala His Lys Phe Ile Ser Pro Gln Leu Arg Met
65                  70                  75                  80
Ser Phe Ile Val Phe Ser Thr Arg Gly Thr Thr Leu Met Lys Leu Thr
                85                  90                  95
Glu Asp Arg Glu Gln Ile Arg Gln Gly Leu Glu Glu Leu Gln Lys Val
            100                 105                 110
Leu Pro Gly Gly Asp Thr Tyr Met His Glu Gly Phe Glu Arg Ala Ser
        115                 120                 125
Glu Gln Ile Tyr Tyr Glu Asn Arg Gln Gly Tyr Arg Thr Ala Ser Val
    130                 135                 140
Ile Ile Ala Leu Thr Asp Gly Glu Leu His Glu Asp Leu Phe Phe Tyr
145                 150                 155                 160
Ser Glu Arg Glu Ala Asn Arg Ser Arg Asp Leu Gly Ala Ile Val Tyr
                165                 170                 175
Cys Val Gly Val Lys Asp Phe Asn Glu Thr Gln Leu Ala Arg Ile Ala
            180                 185                 190
Asp Ser Lys Asp His Val Phe Pro Val Asn Asp Gly Phe Gln Ala Leu
        195                 200                 205
Gln Gly Ile Ile His Ser Ile Leu Lys Lys Ser Cys Ile Glu Ile Leu
    210                 215                 220
Ala Ala Glu Pro Ser Thr Ile Cys Ala Gly Glu Ser Phe Gln Val Val
225                 230                 235                 240
```

```
Val Arg Gly Asn Gly Phe Arg His Ala Arg Asn Val Asp Arg Val Leu
                245                 250                 255
Cys Ser Phe Lys Ile Asn Asp Ser Val Thr Leu Asn Glu Lys Pro Phe
            260                 265                 270
Ser Val Glu Asp Thr Tyr Leu Leu Cys Pro Ala Pro Ile Leu Lys Glu
        275                 280                 285
Val Gly Met Lys Ala Ala Leu Gln Val Ser Met Asn Asp Gly Leu Ser
    290                 295                 300
Phe Ile Ser Ser Ser Val Ile Ile Thr Thr Thr His Cys Ser Asp Gly
305                 310                 315                 320
Ser Ile Leu Ala Ile Ala Leu Leu Ile Leu Phe Leu Leu Leu Ala Leu
                325                 330                 335
Ala Leu Leu Trp Trp Phe Trp Pro Leu Cys Cys Thr Val Ile Ile Lys
            340                 345                 350
Glu Val Pro Pro Pro Pro Ala Glu Glu Ser Glu Glu Glu Asp Asp Asp
        355                 360                 365
Gly Leu Pro Lys Lys Lys Trp Pro Thr Val Asp Ala Ser Tyr Tyr Gly
    370                 375                 380
Gly Arg Gly Val Gly Gly Ile Lys Arg Met Glu Val Arg Trp Gly Glu
385                 390                 395                 400
Lys Gly Ser Thr Glu Glu Gly Ala Lys Leu Glu Lys Ala Lys Asn Ala
                405                 410                 415
Arg Val Lys Met Pro Glu Gln Glu Tyr Glu Phe Pro Glu Pro Arg Asn
            420                 425                 430
Leu Asn Asn Asn Met Arg Arg Pro Ser Ser Pro Arg Lys Trp Tyr Ser
        435                 440                 445
Pro Ile Lys Gly Lys Leu Asp Ala Leu Trp Val Leu Leu Arg Lys Gly
    450                 455                 460
Tyr Asp Arg Val Ser Val Met Arg Pro Gln Pro Gly Asp Thr Gly Arg
465                 470                 475                 480
Cys Ile Asn Phe Thr Arg Val Lys Asn Asn Gln Pro Ala Lys Tyr Pro
                485                 490                 495
Leu Asn Asn Ala Tyr His Thr Ser Ser Pro Pro Pro Ala Pro Ile Tyr
            500                 505                 510
Thr Pro Pro Pro Pro Ala Pro His Cys Pro Pro Pro Pro Pro Ser Ala
        515                 520                 525
Pro Thr Pro Pro Ile Pro Ser Pro Pro Ser Thr Leu Pro Pro Pro Pro
    530                 535                 540
Gln Ala Pro Pro Pro Asn Arg Ala Pro Pro Pro Ser Arg Pro Pro Pro
545                 550                 555                 560
Arg Pro Ser Val
```

<210> 233
<211> 5086
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(5086)
<223> n = A,T,C or G

<400> 233

```
agcaccacgg cagcaggagg tttcggncta agttggaggt actggnccac gactgcatgc      60
ccgcgcccgc caggtgatac ctccgccggt gacccagggg ctctgcgaca caaggagtct     120
gcatgtctaa gtgctagaca tgctcagctt tgtggatacg cggactttgt tgctgcttgc     180
agtaacctta tgcctagcaa catgccaatc tttacaagag gaaactgtaa gaaagggccc     240
agccggagat agaggaccac gtggagaaag gggtccacca ggccccccag gcagagatgg     300
tgaagatggt cccacaggcc ctcctggtcc acctggtcct cctggccccc ctggtctcgg     360
tgggaacttt gctgctcagt atgatggaaa aggagttgga cttggccctg gaccaatggg     420
```

cttaatggga cctagaggcc cacctggtgc agctggagcc ccaggccctc aaggtttcca 480
aggacctgct ggtgagcctg gtgaacctgg tcaaactggt cctgcaggtg ctcgtggtcc 540
agctggccct cctggcaagg ctggtgaaga tggtcaccct ggaaaacccg gacgacctgg 600
tgagagagga gttgttggac cacagggtgc tcgtggtttc cctggaactc ctggacttcc 660
tggcttcaaa ggcattaggg gacacaatgg tctggatgga ttgaagggac agcccggtgc 720
tcctggtgtg aagggtgaac ctggtgcccc tggtgaaaat ggaactccag gtcaaacagg 780
agcccgtggg cttcctggtg agagaggacg tgttggtgcc cctggcccag ctggtgcccg 840
tggcagtgat ggaagtgtgg gtcccgtggg tcctgctggt cccattgggt ctgctggccc 900
tccaggcttc ccaggtgccc ctggccccaa gggtgaaatt ggagctgttg gtaacgctgg 960
tcctgctggt cccgccggtc cccgtggtga agtgggtctt ccaggcctct ccggccccgt 1020
tggacctcct ggtaatcctg gagcaaacgg ccttactggt gccaagggtg ctgctggcct 1080
tcccggcgtt gctggggctc ccggcctccc tggaccccgc ggtattcctg gccctgttgg 1140
tgctgccggt gctactggtg ccagaggact tgttggtgag cctggtccag ctggctccaa 1200
aggagagagc ggtaacaagg gtgagcccgg ctctgctggg ccccaaggtc ctcctggtcc 1260
cagtggtgaa gaaggaaaga gaggccctaa tggggaagct ggatctgccg gccctccagg 1320
acctcctggg ctgagaggta gtcctggttc tcgtggtctt cctggagctg atggcagagc 1380
tggcgtcatg ggccctcctg gtagtcgtgg tgcaagtggc cctgctggag tccgaggacc 1440
taatggagat gctggtcgcc ctggggagcc tggtctcatg ggacccagag gtcttcctgg 1500
ttcccctgga aatatcggcc ccgctggaaa agaaggtcct gtcggcctcc ctggcatcga 1560
cggcaggcct ggcccaattg gcccagctgg agcaagagga gagcctggca acattggatt 1620
ccctggaccc aaaggcccca ctggtgatcc tggcaaaaac ggtgataaag gtcatgctgg 1680
tcttgctggt gctcggggtg ctccaggtcc tgatggaaac aatggtgctc agggacctcc 1740
tggaccacag ggtgttcaag gtggaaaagg tgaacagggt cccgctggtc ctccaggctt 1800
ccagggtctg cctggcccct caggtcccgc tggtgaagtt ggcaaaccag gagaaagggg 1860
tctccatggt gagtttggtc tccctggtcc tgctggtcca agaggggaac gcggtccccc 1920
aggtgagagt ggtgctgccg gtcctactgg tcctattgga agccgaggtc cttctggacc 1980
cccagggcct gatggaaaca agggtgaacc tggtgtggtt ggtgctgtgg gcactgctgg 2040
tccatctggt cctagtggac tcccaggaga gaggggtgct gctggcatac ctggaggcaa 2100
gggagaaaag ggtgaacctg gtctcagagg tgaaattggt aaccctggca gagatggtgc 2160
tcgtggtgct catggtgctg taggtgcccc tggtcctgct ggagccacag gtgaccgggg 2220
cgaagctggg gctgctggtc ctgctggtcc tgctggtcct cggggaagcc ctggtgaacg 2280
tggcgaggtc ggtcctgctg gccccaacgg atttgctggt ccggctggtg ctgctggtca 2340
accgggtgct aaaggagaaa gaggagccaa agggcctaag ggtgaaaacg gtgttgttgg 2400
tcccacaggc cccgttggag ctgctggccc agctggtcca aatggtcccc ccggtcctgc 2460
tggaagtcgt ggtgatggag gccccccctgg tatgactggt ttccctggtg ctgctggacg 2520
gactggtccc ccaggaccct ctggtatttc tggccctcct ggtccccctg gtcctgctgg 2580
gaaagaaggg cttcgtggtc ctcgtggtga ccaaggtcca gttggccgaa ctggagaagt 2640
aggtgcagtt ggtccccctg gcttcgctgg tgagaagggt ccctctggag aggctggtac 2700
tgctggacct cctggcactc caggtcctca gggtcttctt ggtgctcctg gtattctggg 2760
tctccctggc tcgagaggtg aacgtggtct acctggtgtt gctggtgctg tgggtgaacc 2820
tggtcctctt ggcattgccg gccctcctgg ggcccgtggt cctcctggtg ctgtgggtag 2880
tcctggagtc aacggtgctc ctggtgaagc tggtcgtgat ggcaaccctg ggaacgatgg 2940
tcccccaggt cgcgatggtc aacccggaca caagggagag cgcggttacc ctggcaatat 3000
tggtcccgtt ggtgctgcag gtgcacctgg tcctcatggc cccgtgggtc ctgctggcaa 3060
acatggaaac cgtggtgaaa ctggtccttc tggtcctgtt ggtcctgctg gtgctgttgg 3120
cccaagaggt cctagtggcc cacaaggcat tcgtggcgat aagggagagc ccggtgaaaa 3180
ggggcccaga ggtcttcctg gcttaaaggg acacaatgga ttgcaaggtc tgcctggtat 3240
cgctggtcac catggtgatc aaggtgctcc tggctccgtg ggtcctgctg gtcctagggg 3300
ccctgctggt ccttctggcc ctgctggaaa agatggtcgc actggacatc ctggtacggt 3360
tggacctgct ggcattcgag gccctcaggg tcaccaaggc cctgctggcc cccctggtcc 3420
ccctggccct cctggacctc caggtgtaag cggtggtggt tatgactttg gttacgatgg 3480
agacttctac agggctgacc agcctcgctc agcaccttct ctcagaccca aggactatga 3540
agttgatgct actctgaagt ctctcaacaa ccagattgag acccttctta ctcctgaagg 3600
ctctagaaag aacccagctc gcacatgccg tgacttgaga ctcagccacc cagagtggag 3660
cagtggttac tactggattg accctaacca aggatgcact atggatgcta tcaaagtata 3720
ctgtgatttc tctactggcg aaacctgtat ccgggcccaa cctgaaaaca tcccagccaa 3780
gaactggtat aggagctcca aggacaagaa acacgtctgg ctaggagaaa ctatcaatgc 3840
tggcagccag tttgaatata atgtagaagg agtgacttcc aaggaaatgg ctacccaact 3900
tgccttcatg cgcctgctgg ccaactatgc ctctcagaac atcacctacc actgcaagaa 3960
cagcattgca tacatggatg aggagactgg caacctgaaa aaggctgtca ttctacaggg 4020
ctctaatgat gttgaacttg ttgctgaggg caacagcagg ttcacttaca ctgttcttgt 4080

```
agatggctgc tctaaaaaga caaatgaatg gggaaagaca atcattgaat acaaaacaaa    4140
taagccatca cgcctgccct tccttgatat tgcacctttg gacatcggtg gtgctgacca    4200
tgaattcttt gtggacattg gcccagtctg tttcaaataa atgaactcaa tctaaattaa    4260
aaaagaaaga aatttgaaaa aactttctct ttgccatttc ttcttcttct tttttaactg    4320
aaagctgaat ccttccattt cttctgcaca tctacttgct taaattgtgg gcaaaagaga    4380
aaaagaagga ttgatcagag cattgtgcaa tacagtttca ttaactcctt cccccgctcc    4440
cccaaaaatt tgaatttttt tttcaacact cttacacctg ttatggaaaa tgtcaacctt    4500
tgtaagaaaa ccaaaataaa aattgaaaaa taaaaaccat aaacatttgc accacttgtg    4560
gcttttgaat atcttccaca gagggaagtt taaaacccaa acttccaaag gtttaaacta    4620
cctcaaaaca ctttcccatg agtgtgatcc acattgttag gtgctgacct agacagagat    4680
gaactgaggt ccttgttttg ttttgttcat aatacaaagg tgctaattaa tagtatttca    4740
gatacttgaa gaatgttgat ggtgctagaa gaatttgaga agaaatactc ctgtattgag    4800
ttgtatcgtg tggtgtattt tttaaaaaat ttgatttagc attcatattt tccatcttat    4860
tcccaattaa aagtatgcag attatttgcc caaagttgtc ctcttcttca gattcagcat    4920
ttgttctttg ccagtctcat tttcatcttc ttccatggtt ccacagaagc tttgtttctt    4980
gggcaagcag aaaaattaaa ttgtacctat tttgtatatg tgagatgttt aaataaattg    5040
tgaaaaaaat gaaataaagc atgtttggtt ttccaaaaga acatat                   5086
```

<210> 234
<211> 1366
<212> PRT
<213> Homo sapiens

<400> 234

```
Met Leu Ser Phe Val Asp Thr Arg Thr Leu Leu Leu Leu Ala Val Thr
 1               5                  10                  15
Leu Cys Leu Ala Thr Cys Gln Ser Leu Gln Glu Glu Thr Val Arg Lys
            20                  25                  30
Gly Pro Ala Gly Asp Arg Gly Pro Arg Gly Glu Arg Gly Pro Pro Gly
        35                  40                  45
Pro Pro Gly Arg Asp Gly Glu Asp Gly Pro Thr Gly Pro Pro Gly Pro
    50                  55                  60
Pro Gly Pro Pro Gly Pro Pro Gly Leu Gly Gly Asn Phe Ala Ala Gln
65                  70                  75                  80
Tyr Asp Gly Lys Gly Val Gly Leu Gly Pro Gly Pro Met Gly Leu Met
                85                  90                  95
Gly Pro Arg Gly Pro Pro Gly Ala Ala Gly Ala Pro Gly Pro Gln Gly
            100                 105                 110
Phe Gln Gly Pro Ala Gly Glu Pro Gly Glu Pro Gly Gln Thr Gly Pro
        115                 120                 125
Ala Gly Ala Arg Gly Pro Ala Gly Pro Pro Gly Lys Ala Gly Glu Asp
    130                 135                 140
Gly His Pro Gly Lys Pro Gly Arg Pro Gly Glu Arg Gly Val Val Gly
145                 150                 155                 160
Pro Gln Gly Ala Arg Gly Phe Pro Gly Thr Pro Gly Leu Pro Gly Phe
                165                 170                 175
Lys Gly Ile Arg Gly His Asn Gly Leu Asp Gly Leu Lys Gly Gln Pro
            180                 185                 190
Gly Ala Pro Gly Val Lys Gly Glu Pro Gly Ala Pro Gly Glu Asn Gly
        195                 200                 205
Thr Pro Gly Gln Thr Gly Ala Arg Gly Leu Pro Gly Glu Arg Gly Arg
    210                 215                 220
Val Gly Ala Pro Gly Pro Ala Gly Ala Arg Gly Ser Asp Gly Ser Val
225                 230                 235                 240
Gly Pro Val Gly Pro Ala Gly Pro Ile Gly Ser Ala Gly Pro Pro Gly
                245                 250                 255
Phe Pro Gly Ala Pro Gly Pro Lys Gly Glu Ile Gly Ala Val Gly Asn
            260                 265                 270
Ala Gly Pro Ala Gly Pro Ala Gly Pro Arg Gly Glu Val Gly Leu Pro
```

```
        275                 280                 285
Gly Leu Ser Gly Pro Val Gly Pro Pro Gly Asn Pro Gly Ala Asn Gly
    290                 295                 300
Leu Thr Gly Ala Lys Gly Ala Ala Gly Leu Pro Gly Val Ala Gly Ala
305                 310                 315                 320
Pro Gly Leu Pro Gly Pro Arg Gly Ile Pro Gly Pro Val Gly Ala Ala
                325                 330                 335
Gly Ala Thr Gly Ala Arg Gly Leu Val Gly Glu Pro Gly Pro Ala Gly
            340                 345                 350
Ser Lys Gly Glu Ser Gly Asn Lys Gly Glu Pro Gly Ser Ala Gly Pro
        355                 360                 365
Gln Gly Pro Pro Gly Pro Ser Gly Glu Glu Gly Lys Arg Gly Pro Asn
    370                 375                 380
Gly Glu Ala Gly Ser Ala Gly Pro Pro Gly Pro Pro Gly Leu Arg Gly
385                 390                 395                 400
Ser Pro Gly Ser Arg Gly Leu Pro Gly Ala Asp Gly Arg Ala Gly Val
                405                 410                 415
Met Gly Pro Pro Gly Ser Arg Gly Ala Ser Gly Pro Ala Gly Val Arg
            420                 425                 430
Gly Pro Asn Gly Asp Ala Gly Arg Pro Gly Glu Pro Gly Leu Met Gly
        435                 440                 445
Pro Arg Gly Leu Pro Gly Ser Pro Gly Asn Ile Gly Pro Ala Gly Lys
    450                 455                 460
Glu Gly Pro Val Gly Leu Pro Gly Ile Asp Gly Arg Pro Gly Pro Ile
465                 470                 475                 480
Gly Pro Ala Gly Ala Arg Gly Glu Pro Gly Asn Ile Gly Phe Pro Gly
                485                 490                 495
Pro Lys Gly Pro Thr Gly Asp Pro Gly Lys Asn Gly Asp Lys Gly His
            500                 505                 510
Ala Gly Leu Ala Gly Ala Arg Gly Ala Pro Gly Pro Asp Gly Asn Asn
        515                 520                 525
Gly Ala Gln Gly Pro Pro Gly Pro Gln Gly Val Gln Gly Gly Lys Gly
    530                 535                 540
Glu Gln Gly Pro Ala Gly Pro Pro Gly Phe Gln Gly Leu Pro Gly Pro
545                 550                 555                 560
Ser Gly Pro Ala Gly Glu Val Gly Lys Pro Gly Glu Arg Gly Leu His
                565                 570                 575
Gly Glu Phe Gly Leu Pro Gly Pro Ala Gly Pro Arg Gly Glu Arg Gly
            580                 585                 590
Pro Pro Gly Glu Ser Gly Ala Ala Gly Pro Thr Gly Pro Ile Gly Ser
        595                 600                 605
Arg Gly Pro Ser Gly Pro Pro Gly Pro Asp Gly Asn Lys Gly Glu Pro
    610                 615                 620
Gly Val Val Gly Ala Val Gly Thr Ala Gly Pro Ser Gly Pro Ser Gly
625                 630                 635                 640
Leu Pro Gly Glu Arg Gly Ala Ala Gly Ile Pro Gly Gly Lys Gly Glu
                645                 650                 655
Lys Gly Glu Pro Gly Leu Arg Gly Glu Ile Gly Asn Pro Gly Arg Asp
            660                 665                 670
Gly Ala Arg Gly Ala His Gly Ala Val Gly Ala Pro Gly Pro Ala Gly
        675                 680                 685
Ala Thr Gly Asp Arg Gly Glu Ala Gly Ala Ala Gly Pro Ala Gly Pro
    690                 695                 700
Ala Gly Pro Arg Gly Ser Pro Gly Glu Arg Gly Glu Val Gly Pro Ala
705                 710                 715                 720
Gly Pro Asn Gly Phe Ala Gly Pro Ala Gly Ala Ala Gly Gln Pro Gly
                725                 730                 735
Ala Lys Gly Glu Arg Gly Ala Lys Gly Pro Lys Gly Glu Asn Gly Val
            740                 745                 750
Val Gly Pro Thr Gly Pro Val Gly Ala Ala Gly Pro Ala Gly Pro Asn
        755                 760                 765
```

Gly Pro Pro Gly Pro Ala Gly Ser Arg Gly Asp Gly Gly Pro Pro Gly
770 775 780
Met Thr Gly Phe Pro Gly Ala Ala Gly Arg Thr Gly Pro Pro Gly Pro
785 790 795 800
Ser Gly Ile Ser Gly Pro Pro Gly Pro Pro Gly Pro Ala Gly Lys Glu
805 810 815
Gly Leu Arg Gly Pro Arg Gly Asp Gln Gly Pro Val Gly Arg Thr Gly
820 825 830
Glu Val Gly Ala Val Gly Pro Pro Gly Phe Ala Gly Glu Lys Gly Pro
835 840 845
Ser Gly Glu Ala Gly Thr Ala Gly Pro Pro Gly Thr Pro Gly Pro Gln
850 855 860
Gly Leu Leu Gly Ala Pro Gly Ile Leu Gly Leu Pro Gly Ser Arg Gly
865 870 875 880
Glu Arg Gly Leu Pro Gly Val Ala Gly Ala Val Gly Glu Pro Gly Pro
885 890 895
Leu Gly Ile Ala Gly Pro Pro Gly Ala Arg Gly Pro Pro Gly Ala Val
900 905 910
Gly Ser Pro Gly Val Asn Gly Ala Pro Gly Glu Ala Gly Arg Asp Gly
915 920 925
Asn Pro Gly Asn Asp Gly Pro Pro Gly Arg Asp Gly Gln Pro Gly His
930 935 940
Lys Gly Glu Arg Gly Tyr Pro Gly Asn Ile Gly Pro Val Gly Ala Ala
945 950 955 960
Gly Ala Pro Gly Pro His Gly Pro Val Gly Pro Ala Gly Lys His Gly
965 970 975
Asn Arg Gly Glu Thr Gly Pro Ser Gly Pro Val Gly Pro Ala Gly Ala
980 985 990
Val Gly Pro Arg Gly Pro Ser Gly Pro Gln Gly Ile Arg Gly Asp Lys
995 1000 1005
Gly Glu Pro Gly Glu Lys Gly Pro Arg Gly Leu Pro Gly Leu Lys Gly
1010 1015 1020
His Asn Gly Leu Gln Gly Leu Pro Gly Ile Ala Gly His His Gly Asp
1025 1030 1035 1040
Gln Gly Ala Pro Gly Ser Val Gly Pro Ala Gly Pro Arg Gly Pro Ala
1045 1050 1055
Gly Pro Ser Gly Pro Ala Gly Lys Asp Gly Arg Thr Gly His Pro Gly
1060 1065 1070
Thr Val Gly Pro Ala Gly Ile Arg Gly Pro Gln Gly His Gln Gly Pro
1075 1080 1085
Ala Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Val Ser
1090 1095 1100
Gly Gly Gly Tyr Asp Phe Gly Tyr Asp Gly Asp Phe Tyr Arg Ala Asp
1105 1110 1115 1120
Gln Pro Arg Ser Ala Pro Ser Leu Arg Pro Lys Asp Tyr Glu Val Asp
1125 1130 1135
Ala Thr Leu Lys Ser Leu Asn Asn Gln Ile Glu Thr Leu Leu Thr Pro
1140 1145 1150
Glu Gly Ser Arg Lys Asn Pro Ala Arg Thr Cys Arg Asp Leu Arg Leu
1155 1160 1165
Ser His Pro Glu Trp Ser Ser Gly Tyr Tyr Trp Ile Asp Pro Asn Gln
1170 1175 1180
Gly Cys Thr Met Asp Ala Ile Lys Val Tyr Cys Asp Phe Ser Thr Gly
1185 1190 1195 1200
Glu Thr Cys Ile Arg Ala Gln Pro Glu Asn Ile Pro Ala Lys Asn Trp
1205 1210 1215
Tyr Arg Ser Ser Lys Asp Lys Lys His Val Trp Leu Gly Glu Thr Ile
1220 1225 1230
Asn Ala Gly Ser Gln Phe Glu Tyr Asn Val Glu Gly Val Thr Ser Lys
1235 1240 1245
Glu Met Ala Thr Gln Leu Ala Phe Met Arg Leu Leu Ala Asn Tyr Ala

```
    1250                1255                1260
Ser Gln Asn Ile Thr Tyr His Cys Lys Asn Ser Ile Ala Tyr Met Asp
1265                1270                1275                1280
Glu Glu Thr Gly Asn Leu Lys Lys Ala Val Ile Leu Gln Gly Ser Asn
                1285                1290                1295
Asp Val Glu Leu Val Ala Glu Gly Asn Ser Arg Phe Thr Tyr Thr Val
            1300                1305                1310
Leu Val Asp Gly Cys Ser Lys Lys Thr Asn Glu Trp Gly Lys Thr Ile
        1315                1320                1325
Ile Glu Tyr Lys Thr Asn Lys Pro Ser Arg Leu Pro Phe Leu Asp Ile
    1330                1335                1340
Ala Pro Leu Asp Ile Gly Gly Ala Asp His Glu Phe Phe Val Asp Ile
1345                1350                1355                1360
Gly Pro Val Cys Phe Lys
                1365
```

<210> 235
<211> 4168
<212> DNA
<213> Homo sapiens

<400> 235

```
atgggcaacc tggagagcgc cgaggggtc ccgggagagc ccccctctgt cccgttgttg      60
ctgccgcccg gcaagatgcc gatgcctgag ccctgtgagc tggaggaaag gttcgccctg     120
gtgctgagct ccatgaacct gcctccagac aaggcccggc tcctgcggca gtatgacaat     180
gagaagaaat gggatctgat ctgtgaccag gaacgattcc aggtgaagaa tcctccccac     240
acttacattc agaaactcca gagcttcttg gaccccagtg taactcggaa gaagttcagg     300
aggagggtgc aggagtcaac caaagtacta agggagctgg agatctctct tcgcaccaac     360
cacattgggt gggtgcggga atttctgaat gatgaaaaca aaggcctgga tgtactggtg     420
gattacctgt cctttgccca gtgttctgtc atgtttgact ttgagggtct ggaaagtggt     480
gacgatggtg catttgacaa actccggtcc tggagcaggt caatcgagga cctgcagcca     540
cccagcgccc tgtcggcccc cttcaccaac agcctcgctc gctctgcgcg ccagtctgtg     600
ctccggtata gcactctccc tgggcgcagg gccctgaaga actcccgcct agtgagccag     660
aaggatgacg tccacgtctg tatcctttgt ctcagagcca tcatgaacta tcagtacgga     720
ttcaacctgg tcatgtccca cccccatgct gtcaatgaga ttgcacttag cctcaataac     780
aagaatccaa ggaccaaagc ccttgtctta gagcttctgg cagctgtgtg tttggtgcga     840
ggaggtcacg aaatcatcct tgctgccttt gacaatttca aagaggtatg caaggagctg     900
caccgctttg agaagctgat ggagtatttc cggaatgagg acagcaatat tgacttcatg     960
gtggcctgca tgcagttcat caacatcgtg gtgcactcgg tggaggacat gaacttccgg    1020
gtccacctgc agtatgagtt taccaagctg gggctagagg agttcctgca gaagtcaagg    1080
cacacagaga gcgagaagct gcaggtgcag attcaggcat atctggacaa cgtgtttgat    1140
gtcgggggtt tgttggagga tgctgagacc aagaatgtag ccctggagaa ggtggaggag    1200
ttggaggagc atgtgtccca tctcacagag aagcttctgg acctagagaa tgaaaacatg    1260
atgcgggtgg cagaactaga gaagcagctg ctacagcggg agaaggaact agagagcatc    1320
aaggagacat atgagaacac aagccaccag gtgcacaccc tgcggaggct cattaaagag    1380
aaggaggagg cctttcagcg tcgatgtcat ttggagccaa atgtccgggg cctggagtct    1440
gtggacagtg aggccctggc cagagtaggc cctgcagagc tgagtgaggg catgccaccc    1500
tccgacctgg accttctggc tccagcccca ccccctgagg aggtcctgcc tcttcctcca    1560
ccaccagctc cgcccttgcc ccctccacct cccccattac cagacaagtg tcccccagcc    1620
ccacctctcc ctggtgctgc accctctgtg gtgttgacag tgggcctgtc agccattcga    1680
attaagaaac ctatcaagac caagttccgg ctgcctgtct tcaactggac agcactgaaa    1740
cccaaccaga tcagtggcac tgtcttcagc gaacttgatg atgagaagat cttggaggac    1800
ctggatcttg ataagtttga agaattattc aagacaaaag cgcagggccc tgcccttgac    1860
ctcatctgct ccaaaaacaa gacagcgcaa aaagctgcca gcaaggtgac tctgttggaa    1920
gccaatcgtg ccaagaacct ggccatcacc ctacgcaagg ctggccgctc ggctgaggag    1980
atctgcaggg ccattcatac gtttgacttg cagacactac ctgtggactt cgtggagtgc    2040
ctgatgcgct tcctgcccac agaggctgag gtaaagctgc tgcggcaata tgagcgggag    2100
cggcagcccc tggaggagtt ggcagctgag gaccgcttca tgctgctctt cagcaaggtg    2160
gaacggttga cccagcgaat ggctggcatg gccttcctgg ggaacttcca ggataacctg    2220
cagatgctca caccgcaact caatgccatc attgcggcgt ccgcttccgt caagtcttca    2280
cagaagctga agcagatgtt ggagatcata cttgcactgg ggaactacat gaacagcagc    2340
```

```
aagcggggag ctgtgtatgg cttcaagctc cagagcctgg atctgctgct ggataccaag    2400
tccactgacc ggaagatgac actgcttcat ttcatcgcct tgacagtgaa ggagaaatac    2460
ccagacctgg ctaacttctg gcatgagctg cactttgttg agaaggctgc agcagtgtcc    2520
ctggagaacg tgctgctgga cgtgaaggag ctgggccggg gcatggagct gattcggcgt    2580
gagtgcagca tccatgacaa cagcgtcctc cggaacttcc tcagtaccaa tgaaggcaaa    2640
ctagacaagc tccagcggga cgccaagacg gctgaggagg cctacaatgc agttgtgcgc    2700
tactttggcg agagtcccaa gactacacct ccttctgtat tcttcccagt atttgtccga    2760
ttcattcgtt cttacaagga agcagaacaa gagaatgaag cccgcaagaa gcaggaggag    2820
gtaatgcggg agaagcagct ggctcaggaa gccaagaaac tggatgccaa gaccccatcc    2880
cagcggaaca agtggcaaca gcaggagtta atagcagagt tgaggcggcg ccaggccaag    2940
gaacaccggc ctgtttatga ggggaaggat ggtaccatcg aggacatcat cacagtgctg    3000
aagagtgtcc ctttcacggc ccgtactgcc aagcggggct cacgcttctt ctgtgatgca    3060
gcccaccatg atgagtcaaa ctgttagccc ccaaggttgg ggcccgacag gcctccactg    3120
ccagcctatg gttgttcgcc accaagccag gagtgctgca ccgcccagtg gtccccctcg    3180
ggctccaggc ccccactgag accctctcgg aggcagaagc acttcacccc tcagagtcct    3240
acaagtccaa ccagtggacc tggaattggc caagggctca ggagagggct gtgttgctct    3300
ctcaaccatg tccgccccag ctcttgaggc tggatctttc tacttgtgcc actatgggca    3360
ctaggtctgt aggtccctgg tgcttccagt actgcacttt gcccccaagg tctttgactt    3420
catttcctga agggtcacca agggtcagct cagggctagg aaaaaccatt tccagcctta    3480
gcctaaacag ggcacataga tctctcccac tagagcccag agggatgaga ggagagagca    3540
actgttcttt cttttttttt cccttccttt ttgcaggccc atggtcagct ctggtctaga    3600
tgtatctagg cttagggagc cctgggaccc tgccagtctc agttcatctc ttaccaggag    3660
caaggccctc tgaagcatgg gccgtgccag ctgtgcccta gtgataaggg taagaggaga    3720
gatgtcaggc tcactgccct tatttctctg cccatttcat tctaggctca cactgtcctt    3780
gtcaaggtgg gcagaagagc agaggtcttc tctgcaccaa ccactctctg cagatggctg    3840
gagaaagggt gtgccaactc ttcaccttct ttcctcagct acggtttttt ttttttttt     3900
ttttttggc aggggacaag gagcatggtg gtcttggcta tttgcttacc ttcccgtttc    3960
tcctctgccc ctggaaggga atgtgggggc ccacttttt gtacatgtac cacctccctt    4020
tcctcttact gtacataaac ctcagactct ccccctctca acaaaggctt gatgcaccaa    4080
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa    4140
aaaaaaaaaa aaaaaaaaaa aaaaaaaa                                       4168
```

<210> 236
<211> 1028
<212> PRT
<213> Homo sapiens

<400> 236

```
Met Gly Asn Leu Glu Ser Ala Glu Gly Val Pro Gly Glu Pro Pro Ser
 1               5                  10                  15
Val Pro Leu Leu Leu Pro Pro Gly Lys Met Pro Met Pro Glu Pro Cys
            20                  25                  30
Glu Leu Glu Glu Arg Phe Ala Leu Val Leu Ser Ser Met Asn Leu Pro
        35                  40                  45
Pro Asp Lys Ala Arg Leu Leu Arg Gln Tyr Asp Asn Glu Lys Lys Trp
    50                  55                  60
Asp Leu Ile Cys Asp Gln Glu Arg Phe Gln Val Lys Asn Pro Pro His
65                  70                  75                  80
Thr Tyr Ile Gln Lys Leu Gln Ser Phe Leu Asp Pro Ser Val Thr Arg
                85                  90                  95
Lys Lys Phe Arg Arg Arg Val Gln Glu Ser Thr Lys Val Leu Arg Glu
            100                 105                 110
Leu Glu Ile Ser Leu Arg Thr Asn His Ile Gly Trp Val Arg Glu Phe
        115                 120                 125
Leu Asn Asp Glu Asn Lys Gly Leu Asp Val Leu Val Asp Tyr Leu Ser
    130                 135                 140
Phe Ala Gln Cys Ser Val Met Phe Asp Phe Glu Gly Leu Glu Ser Gly
145                 150                 155                 160
Asp Asp Gly Ala Phe Asp Lys Leu Arg Ser Trp Ser Arg Ser Ile Glu
                165                 170                 175
Asp Leu Gln Pro Pro Ser Ala Leu Ser Ala Pro Phe Thr Asn Ser Leu
```

```
                180                 185                 190
Ala Arg Ser Ala Arg Gln Ser Val Leu Arg Tyr Ser Thr Leu Pro Gly
        195                 200                 205
Arg Arg Ala Leu Lys Asn Ser Arg Leu Val Ser Gln Lys Asp Asp Val
    210                 215                 220
His Val Cys Ile Leu Cys Leu Arg Ala Ile Met Asn Tyr Gln Tyr Gly
225                 230                 235                 240
Phe Asn Leu Val Met Ser His Pro His Ala Val Asn Glu Ile Ala Leu
                245                 250                 255
Ser Leu Asn Asn Lys Asn Pro Arg Thr Lys Ala Leu Val Leu Glu Leu
            260                 265                 270
Leu Ala Ala Val Cys Leu Val Arg Gly Gly His Glu Ile Ile Leu Ala
        275                 280                 285
Ala Phe Asp Asn Phe Lys Glu Val Cys Lys Glu Leu His Arg Phe Glu
    290                 295                 300
Lys Leu Met Glu Tyr Phe Arg Asn Glu Asp Ser Asn Ile Asp Phe Met
305                 310                 315                 320
Val Ala Cys Met Gln Phe Ile Asn Ile Val Val His Ser Val Glu Asp
                325                 330                 335
Met Asn Phe Arg Val His Leu Gln Tyr Glu Phe Thr Lys Leu Gly Leu
            340                 345                 350
Glu Glu Phe Leu Gln Lys Ser Arg His Thr Glu Ser Glu Lys Leu Gln
        355                 360                 365
Val Gln Ile Gln Ala Tyr Leu Asp Asn Val Phe Asp Val Gly Gly Leu
    370                 375                 380
Leu Glu Asp Ala Glu Thr Lys Asn Val Ala Leu Glu Lys Val Glu Glu
385                 390                 395                 400
Leu Glu Glu His Val Ser His Leu Thr Glu Lys Leu Leu Asp Leu Glu
                405                 410                 415
Asn Glu Asn Met Met Arg Val Ala Glu Leu Glu Lys Gln Leu Leu Gln
            420                 425                 430
Arg Glu Lys Glu Leu Glu Ser Ile Lys Glu Thr Tyr Glu Asn Thr Ser
        435                 440                 445
His Gln Val His Thr Leu Arg Arg Leu Ile Lys Glu Lys Glu Glu Ala
    450                 455                 460
Phe Gln Arg Arg Cys His Leu Glu Pro Asn Val Arg Gly Leu Glu Ser
465                 470                 475                 480
Val Asp Ser Glu Ala Leu Ala Arg Val Gly Pro Ala Glu Leu Ser Glu
                485                 490                 495
Gly Met Pro Pro Ser Asp Leu Asp Leu Leu Ala Pro Ala Pro Pro Pro
            500                 505                 510
Glu Glu Val Leu Pro Leu Pro Pro Pro Pro Ala Pro Pro Leu Pro Pro
        515                 520                 525
Pro Pro Pro Pro Leu Pro Asp Lys Cys Pro Pro Ala Pro Pro Leu Pro
    530                 535                 540
Gly Ala Ala Pro Ser Val Val Leu Thr Val Gly Leu Ser Ala Ile Arg
545                 550                 555                 560
Ile Lys Lys Pro Ile Lys Thr Lys Phe Arg Leu Pro Val Phe Asn Trp
                565                 570                 575
Thr Ala Leu Lys Pro Asn Gln Ile Ser Gly Thr Val Phe Ser Glu Leu
            580                 585                 590
Asp Asp Glu Lys Ile Leu Glu Asp Leu Asp Leu Asp Lys Phe Glu Glu
        595                 600                 605
Leu Phe Lys Thr Lys Ala Gln Gly Pro Ala Leu Asp Leu Ile Cys Ser
    610                 615                 620
Lys Asn Lys Thr Ala Gln Lys Ala Ala Ser Lys Val Thr Leu Leu Glu
625                 630                 635                 640
Ala Asn Arg Ala Lys Asn Leu Ala Ile Thr Leu Arg Lys Ala Gly Arg
                645                 650                 655
Ser Ala Glu Glu Ile Cys Arg Ala Ile His Thr Phe Asp Leu Gln Thr
            660                 665                 670
```

```
Leu Pro Val Asp Phe Val Glu Cys Leu Met Arg Phe Leu Pro Thr Glu
        675                 680                 685
Ala Glu Val Lys Leu Leu Arg Gln Tyr Glu Arg Glu Arg Gln Pro Leu
    690                 695                 700
Glu Glu Leu Ala Ala Glu Asp Arg Phe Met Leu Leu Phe Ser Lys Val
705                 710                 715                 720
Glu Arg Leu Thr Gln Arg Met Ala Gly Met Ala Phe Leu Gly Asn Phe
                725                 730                 735
Gln Asp Asn Leu Gln Met Leu Thr Pro Gln Leu Asn Ala Ile Ile Ala
            740                 745                 750
Ala Ser Ala Ser Val Lys Ser Ser Gln Lys Leu Lys Gln Met Leu Glu
        755                 760                 765
Ile Ile Leu Ala Leu Gly Asn Tyr Met Asn Ser Ser Lys Arg Gly Ala
    770                 775                 780
Val Tyr Gly Phe Lys Leu Gln Ser Leu Asp Leu Leu Leu Asp Thr Lys
785                 790                 795                 800
Ser Thr Asp Arg Lys Met Thr Leu Leu His Phe Ile Ala Leu Thr Val
                805                 810                 815
Lys Glu Lys Tyr Pro Asp Leu Ala Asn Phe Trp His Glu Leu His Phe
            820                 825                 830
Val Glu Lys Ala Ala Ala Val Ser Leu Glu Asn Val Leu Leu Asp Val
        835                 840                 845
Lys Glu Leu Gly Arg Gly Met Glu Leu Ile Arg Arg Glu Cys Ser Ile
    850                 855                 860
His Asp Asn Ser Val Leu Arg Asn Phe Leu Ser Thr Asn Glu Gly Lys
865                 870                 875                 880
Leu Asp Lys Leu Gln Arg Asp Ala Lys Thr Ala Glu Glu Ala Tyr Asn
                885                 890                 895
Ala Val Val Arg Tyr Phe Gly Glu Ser Pro Lys Thr Thr Pro Pro Ser
            900                 905                 910
Val Phe Phe Pro Val Phe Val Arg Phe Ile Arg Ser Tyr Lys Glu Ala
        915                 920                 925
Glu Gln Glu Asn Glu Ala Arg Lys Lys Gln Glu Glu Val Met Arg Glu
    930                 935                 940
Lys Gln Leu Ala Gln Glu Ala Lys Lys Leu Asp Ala Lys Thr Pro Ser
945                 950                 955                 960
Gln Arg Asn Lys Trp Gln Gln Gln Glu Leu Ile Ala Glu Leu Arg Arg
                965                 970                 975
Arg Gln Ala Lys Glu His Arg Pro Val Tyr Glu Gly Lys Asp Gly Thr
            980                 985                 990
Ile Glu Asp Ile Ile Thr Val Leu Lys Ser Val Pro Phe Thr Ala Arg
        995                 1000                1005
Thr Ala Lys Arg Gly Ser Arg Phe Phe Cys Asp Ala Ala His His Asp
    1010                1015                1020
Glu Ser Asn Cys
1025
```

<210> 237
<211> 5641
<212> DNA
<213> Homo sapiens

<400> 237

```
cggaggagga cgcgagcccc ttgcgggcgg tcatcacagc ccagcctcgg ggctgccaca      60
gcgcgttgcg cctgtgcgcc ctcggtcccc gcgtccactg agcgccgcgc tcggggatgg     120
ggcccggccg gccggccccc gcgccctggc ctcgtcacct gctgcgctgc gtcctgctcc     180
tcgggtgcct gcacctcggc cgtcccggcg cccctgggga cgccgccctc ccggaaccca     240
acgtcttcct catcttcagc catggactgc agggctgcct ggaggcccag ggcgggcagg     300
tcagagtcac cccggcttgc aataccagcc tccctgccca gcgctggaag tgggtctccc     360
gaaaccggct attcaacctg ggtaccatgc agtgcctggg cacaggctgg ccaggcacca     420
acaccacggc ctccctgggc atgtatgagt gtgaccggga agcactgaat cttcgctggc     480
```

attgtcgtac actgggtgac cagctgtcct tgctcctggg ggcccgcacc agcaacatat 540
ccaagcctgg cacccttgag cgtggtgacc agacccgcag tggccagtgg cgcatctacg 600
gcagcgagga ggacctatgt gctctgccct accacgaggt ctacaccatc cagggaaact 660
cccacggaaa gccgtgcacc atccccttca aatatgacaa ccagtggttc cacggctgca 720
ccagcacggg ccgcgaggat ggtcacctgt ggtgtgccac cacccaggac tacggcaaag 780
acgagcgctg gggcttctgc cccatcaaga gtaacgactg cgagaccttc tgggacaagg 840
accagctgac tgacagctgc taccagttta acttccagtc cacgctgtcg tggagggagg 900
cctgggccag ctgcgagcag cagggtgcgg atctgctgag catcacggag atccacgagc 960
agacctacat caacggcctc ctcactgggt acagctccac cctgtggatc ggcttgaatg 1020
acttggacac gagcggaggc tggcagtggt cggacaactc gcccctcaag tacctcaact 1080
gggagagtga ccagccggac aaccccagtg aggagaactg tggagtgatc cgcactgagt 1140
cctcgggcgg ctggcagaac cgtgactgca gcatcgcgct gccctatgtg tgcaagaaga 1200
agcccaacgc cacggccgag cccacccctc cagacaggtg ggccaatgtg aaggtggagt 1260
gcgagccgag ctggcagccc ttccagggcc actgctaccg cctgcaggcc gagaagcgca 1320
gctggcagga gtccaagaag gcatgtctac ggggcggtgg cgacctggtc agcatccaca 1380
gcatggcgga gctggaattc atcaccaagc agatcaagca agaggtggag gagctgtgga 1440
tcggcctcaa cgatttgaaa ctgcagatga attttgagtg gtctgacggg agccttgtga 1500
gcttcaccca ctggcacccc tttgagccca acaacttccg ggacagtctg gaggactgtg 1560
tcaccatctg gggcccggaa ggccgctgga acgacagtcc ctgtaaccag tccttgccat 1620
ccatctgcaa gaaggcaggc cagctgagcc agggggccgc cgaggaggac catggctgcc 1680
ggaagggttg gacgtggcac agcccatcct gctactggct gggagaagac caagtgacct 1740
acagtgaggc ccggcgcctg tgcactgacc atggctctca gctggtcacc atcaccaaca 1800
ggttcgagca ggccttcgtc agcagcctca tctacaactg ggagggcgag tacttctgga 1860
cggccctgca ggacctcaac agcaccggct ccttcttctg gctcagtggg gatgaagtca 1920
tgtacaccca ctggaaccgg gaccagcccg ggtacagccg tgggggctgc gtggcgctgg 1980
ccactggcag cgccatgggg ctgtgggagg tgaagaactg tacctcgttc cgggcccgct 2040
acatctgccg gcagagcctg ggcactccag tgacgccgga gctgccgggg ccagatccca 2100
cgcccagcct cactggctcc tgtccccagg gctgggcctc ggacaccaaa ctccggtatt 2160
gctataaggt gttcagctca gagcggctgc aggacaagaa gagctgggtc caggcccagg 2220
gggcctgcca ggagctgggg gcccagctgc tgagcctggc cagctacgag gaggagcact 2280
ttgtggccaa catgctcaac aagatcttcg gtgaatcaga acccgagatc cacgagcagc 2340
actggttctg gatcggcctg aaccgtcggg atcccagagg gggtcagagt tggcgctgga 2400
gcgacggcgt agggttctct taccacaatt tcgaccggag ccggcacgac gacgacgaca 2460
tccgaggctg tgcggtgctg gacctggcct ccctgcagtg ggtggccatg cagtgcgaca 2520
cacagctgga ctggatctgc aagatcccca gaggtacgga cgtgcgggag cccgacgaca 2580
gccctcaagg ccgacgggaa tggctgcgct tccaggaggc cgagtacaag ttctttgagc 2640
accactccac gtgggcgcag gcgcagcgca tctgcacgtg gttccaggcc gagctgacct 2700
ccgtgcacag ccaggcagag ctagacttcc tgagccacaa cttgcagaag ttctcccggg 2760
cccaggagca gcactggtgg atcggcctgc acacctctga gagcgatggg cgcttcagat 2820
ggacagatgg ttccattata aacttcatct cctgggcacc aggcaaacct cggcctgtcg 2880
gcaaggacaa gaagtgcgtg tacatgacag ccagccgaga ggactggggg gaccagaggt 2940
gcctgacagc cttgccctac atctgcaagc gcagcaacgt caccaaagaa acgcagcccc 3000
cagacctgcc aactacagcc ctgggggggct gcccctctga ctggatccag ttcctcaaca 3060
agtgttttca ggtccagggc caggaacccc agagccgggt gaagtggtca gaggcacagt 3120
tctcctgtga acagcaagag gcccagctgg tcaccatcac aaacccctta gagcaagcat 3180
tcatcacagc cagcctgccc aatgtgacct ttgacctttg gattggcctc catgcctcgc 3240
agagggactt ccagtgggtg gagcaggagc ctttgatgta tgccaactgg gcacctgggg 3300
agccctctgg ccctagccct gctcccagtg gcaacaaacc gaccagctgt gcggtggtcc 3360
tgcacagccc ctcagcccac ttcactggcc gctgggacga tcggagctgc acggaggaga 3420
cccatggctt catctgccag aagggcacgg acccctccct gagcccgtcc ccagcagcgc 3480
tgccccccgc cccgggcact gagctctcct acctcaacgg caccttccgg ctgcttcaga 3540
agccgctgcg ctggcacgat gccctcctgc tgtgtgagag ccacaatgcc agcctggcct 3600
acgtgcccga cccctacacc caggccttcc tcacgcaggc tgcccgaggg ctgcgcacgc 3660
cgctctggat tgggctggct ggcgaggagg gctctcggcg gtactcctgg gtctcagagg 3720
agccgctgaa ctacgtgggc tggcaggacg gggagccgca gcagccgggg ggctgtacct 3780
acgtagatgt ggacggggcc tggcgcacca ccagctgtga caccaagctg caggggggctg 3840
tgtgtggggt tagcagtggg ccccctcctc cccgaagaat aagctaccat ggcagctgtc 3900
cccagggact ggcagactcc gcgtggattc ccttccggga gcactgctat tctttccaca 3960
tggagctgct gctgggccac aaggaggcgc gacagcgctg ccagagagcg ggtggggccg 4020
tcctgtctat cctggatgag atggagaatg tgtttgtctg ggagcacctg cagagctatg 4080
agggccagag tcggggcgcc tggctgggca tgaacttcaa ccccaaagga ggcactctgg 4140

```
tctggcagga caacacagct gtgaactact ccaactgggg gcccccgggc ttgggcccca    4200
gcatgctgag ccacaacagc tgctactgga ttcagagcaa cagcgggcta tggcgccccg    4260
gcgcttgcac caacatcacc atgggtgtcg tctgcaagct tcctcgtgct gagcagagca    4320
gcttctcccc atcagcgctt ccagagaacc cagcggccct ggtggtggtg ctgatggcgg    4380
tgctgctgct cctggccttg ctgaccgcag ccctcatcct ttaccggagg cgccagagca    4440
tcgagcgcgg ggcctttgag ggtgcccgct acagccgcag cagctccagc cccaccgagg    4500
ccactgagaa gaacatcctg gtgtcagaca tggaaatgaa tgagcaacaa gaatagagcc    4560
aggcgcgtgg gcagggccag ggcgggagga gctggggagc tggggccctg ggtcagtctg    4620
gccccccacc agctgcctgt ccagttggcc tatggaaggg tgcccttggg agtcgctgtt    4680
gggagccgga gctgggcaga gcctgggctg gtggggtgcc accctcccac aagggctggg    4740
ctgagaccca gctgagtgca gcgtggcgtt tccctttctg ggggggcctg aggtcttgtc    4800
acctggtcct gtgcccccac aggaaccaga ggtaggatgg gaggggggaac gagagcctct    4860
ttctccccag agccccggc ccaggcctgt tgatccgcgc cccaggaccc ccttctttgc    4920
agagcccgag gagcctcccc tgtcccctcg ggcagatctg ttgtgtctct cttcccacct    4980
ggcagcctca gctctgtgcc cctcaccctg ctccctctcg ccccttctct cccacccctt    5040
ccttctgagc cgggccctgg ggattgggga gccctcttgt tcctgatgag ggtcagctga    5100
gggggctgag catccatcac tcctgtgcct gctggggtgg ctgtggggcg tggcaggagg    5160
ggcctaggtg ggttgggcct gagaaccagg gcacgggtgt ggtgtctgct gggctggaga    5220
taagactggg gagagacacc ccaacctccc agggtgggag ctgggccggg ctgggatgtc    5280
atctcctgcc gggcggggga gggctctgcc cctggaagag tcccctgtgg ggaccaaaat    5340
aagttcccta acatctccag ctcctggctc tggtttggag caaggggaag ggttgccaga    5400
gtcctggggg ccccagagga gcaggagtct gggagggccc agagttcacc ctctagtgga    5460
tccaggagga gcagcacccg agccctggag tggcccagta cccttccaag aggccacagt    5520
cccagccagg acaaagtatg cggcccatcc tggtgcgaca gcgtgggaca atgtgaacat    5580
ggactcgaag acatggccct ttctctgtag ttgatttttt aaatgtgcca ttattgtttt    5640
t                                                                    5641
```

<210> 238
<211> 1479
<212> PRT
<213> Homo sapiens

<400> 238

```
Met Gly Pro Gly Arg Pro Ala Pro Ala Pro Trp Pro Arg His Leu Leu
 1               5                  10                  15
Arg Cys Val Leu Leu Leu Gly Cys Leu His Leu Gly Arg Pro Gly Ala
            20                  25                  30
Pro Gly Asp Ala Ala Leu Pro Glu Pro Asn Val Phe Leu Ile Phe Ser
        35                  40                  45
His Gly Leu Gln Gly Cys Leu Glu Ala Gln Gly Gly Gln Val Arg Val
    50                  55                  60
Thr Pro Ala Cys Asn Thr Ser Leu Pro Ala Gln Arg Trp Lys Trp Val
65                  70                  75                  80
Ser Arg Asn Arg Leu Phe Asn Leu Gly Thr Met Gln Cys Leu Gly Thr
                85                  90                  95
Gly Trp Pro Gly Thr Asn Thr Thr Ala Ser Leu Gly Met Tyr Glu Cys
            100                 105                 110
Asp Arg Glu Ala Leu Asn Leu Arg Trp His Cys Arg Thr Leu Gly Asp
        115                 120                 125
Gln Leu Ser Leu Leu Leu Gly Ala Arg Thr Ser Asn Ile Ser Lys Pro
    130                 135                 140
Gly Thr Leu Glu Arg Gly Asp Gln Thr Arg Ser Gly Gln Trp Arg Ile
145                 150                 155                 160
Tyr Gly Ser Glu Glu Asp Leu Cys Ala Leu Pro Tyr His Glu Val Tyr
                165                 170                 175
Thr Ile Gln Gly Asn Ser His Gly Lys Pro Cys Thr Ile Pro Phe Lys
            180                 185                 190
Tyr Asp Asn Gln Trp Phe His Gly Cys Thr Ser Thr Gly Arg Glu Asp
        195                 200                 205
```

Gly His Leu Trp Cys Ala Thr Thr Gln Asp Tyr Gly Lys Asp Glu Arg
210 215 220
Trp Gly Phe Cys Pro Ile Lys Ser Asn Asp Cys Glu Thr Phe Trp Asp
225 230 235 240
Lys Asp Gln Leu Thr Asp Ser Cys Tyr Gln Phe Asn Phe Gln Ser Thr
245 250 255
Leu Ser Trp Arg Glu Ala Trp Ala Ser Cys Glu Gln Gln Gly Ala Asp
260 265 270
Leu Leu Ser Ile Thr Glu Ile His Glu Gln Thr Tyr Ile Asn Gly Leu
275 280 285
Leu Thr Gly Tyr Ser Ser Thr Leu Trp Ile Gly Leu Asn Asp Leu Asp
290 295 300
Thr Ser Gly Gly Trp Gln Trp Ser Asp Asn Ser Pro Leu Lys Tyr Leu
305 310 315 320
Asn Trp Glu Ser Asp Gln Pro Asp Asn Pro Ser Glu Glu Asn Cys Gly
325 330 335
Val Ile Arg Thr Glu Ser Ser Gly Gly Trp Gln Asn Arg Asp Cys Ser
340 345 350
Ile Ala Leu Pro Tyr Val Cys Lys Lys Lys Pro Asn Ala Thr Ala Glu
355 360 365
Pro Thr Pro Pro Asp Arg Trp Ala Asn Val Lys Val Glu Cys Glu Pro
370 375 380
Ser Trp Gln Pro Phe Gln Gly His Cys Tyr Arg Leu Gln Ala Glu Lys
385 390 395 400
Arg Ser Trp Gln Glu Ser Lys Lys Ala Cys Leu Arg Gly Gly Gly Asp
405 410 415
Leu Val Ser Ile His Ser Met Ala Glu Leu Glu Phe Ile Thr Lys Gln
420 425 430
Ile Lys Gln Glu Val Glu Glu Leu Trp Ile Gly Leu Asn Asp Leu Lys
435 440 445
Leu Gln Met Asn Phe Glu Trp Ser Asp Gly Ser Leu Val Ser Phe Thr
450 455 460
His Trp His Pro Phe Glu Pro Asn Asn Phe Arg Asp Ser Leu Glu Asp
465 470 475 480
Cys Val Thr Ile Trp Gly Pro Glu Gly Arg Trp Asn Asp Ser Pro Cys
485 490 495
Asn Gln Ser Leu Pro Ser Ile Cys Lys Lys Ala Gly Gln Leu Ser Gln
500 505 510
Gly Ala Ala Glu Glu Asp His Gly Cys Arg Lys Gly Trp Thr Trp His
515 520 525
Ser Pro Ser Cys Tyr Trp Leu Gly Glu Asp Gln Val Thr Tyr Ser Glu
530 535 540
Ala Arg Arg Leu Cys Thr Asp His Gly Ser Gln Leu Val Thr Ile Thr
545 550 555 560
Asn Arg Phe Glu Gln Ala Phe Val Ser Ser Leu Ile Tyr Asn Trp Glu
565 570 575
Gly Glu Tyr Phe Trp Thr Ala Leu Gln Asp Leu Asn Ser Thr Gly Ser
580 585 590
Phe Phe Trp Leu Ser Gly Asp Glu Val Met Tyr Thr His Trp Asn Arg
595 600 605
Asp Gln Pro Gly Tyr Ser Arg Gly Gly Cys Val Ala Leu Ala Thr Gly
610 615 620
Ser Ala Met Gly Leu Trp Glu Val Lys Asn Cys Thr Ser Phe Arg Ala
625 630 635 640
Arg Tyr Ile Cys Arg Gln Ser Leu Gly Thr Pro Val Thr Pro Glu Leu
645 650 655
Pro Gly Pro Asp Pro Thr Pro Ser Leu Thr Gly Ser Cys Pro Gln Gly
660 665 670
Trp Ala Ser Asp Thr Lys Leu Arg Tyr Cys Tyr Lys Val Phe Ser Ser
675 680 685
Glu Arg Leu Gln Asp Lys Lys Ser Trp Val Gln Ala Gln Gly Ala Cys

690 695 700
Gln Glu Leu Gly Ala Gln Leu Leu Ser Leu Ala Ser Tyr Glu Glu Glu
705 710 715 720
His Phe Val Ala Asn Met Leu Asn Lys Ile Phe Gly Glu Ser Glu Pro
725 730 735
Glu Ile His Glu Gln His Trp Phe Trp Ile Gly Leu Asn Arg Arg Asp
740 745 750
Pro Arg Gly Gly Gln Ser Trp Arg Trp Ser Asp Gly Val Gly Phe Ser
755 760 765
Tyr His Asn Phe Asp Arg Ser Arg His Asp Asp Asp Asp Ile Arg Gly
770 775 780
Cys Ala Val Leu Asp Leu Ala Ser Leu Gln Trp Val Ala Met Gln Cys
785 790 795 800
Asp Thr Gln Leu Asp Trp Ile Cys Lys Ile Pro Arg Gly Thr Asp Val
805 810 815
Arg Glu Pro Asp Asp Ser Pro Gln Gly Arg Arg Glu Trp Leu Arg Phe
820 825 830
Gln Glu Ala Glu Tyr Lys Phe Phe Glu His His Ser Thr Trp Ala Gln
835 840 845
Ala Gln Arg Ile Cys Thr Trp Phe Gln Ala Glu Leu Thr Ser Val His
850 855 860
Ser Gln Ala Glu Leu Asp Phe Leu Ser His Asn Leu Gln Lys Phe Ser
865 870 875 880
Arg Ala Gln Glu Gln His Trp Trp Ile Gly Leu His Thr Ser Glu Ser
885 890 895
Asp Gly Arg Phe Arg Trp Thr Asp Gly Ser Ile Ile Asn Phe Ile Ser
900 905 910
Trp Ala Pro Gly Lys Pro Arg Pro Val Gly Lys Asp Lys Lys Cys Val
915 920 925
Tyr Met Thr Ala Ser Arg Glu Asp Trp Gly Asp Gln Arg Cys Leu Thr
930 935 940
Ala Leu Pro Tyr Ile Cys Lys Arg Ser Asn Val Thr Lys Glu Thr Gln
945 950 955 960
Pro Pro Asp Leu Pro Thr Thr Ala Leu Gly Gly Cys Pro Ser Asp Trp
965 970 975
Ile Gln Phe Leu Asn Lys Cys Phe Gln Val Gln Gly Gln Glu Pro Gln
980 985 990
Ser Arg Val Lys Trp Ser Glu Ala Gln Phe Ser Cys Glu Gln Gln Glu
995 1000 1005
Ala Gln Leu Val Thr Ile Thr Asn Pro Leu Glu Gln Ala Phe Ile Thr
1010 1015 1020
Ala Ser Leu Pro Asn Val Thr Phe Asp Leu Trp Ile Gly Leu His Ala
1025 1030 1035 1040
Ser Gln Arg Asp Phe Gln Trp Val Glu Gln Glu Pro Leu Met Tyr Ala
1045 1050 1055
Asn Trp Ala Pro Gly Glu Pro Ser Gly Pro Ser Pro Ala Pro Ser Gly
1060 1065 1070
Asn Lys Pro Thr Ser Cys Ala Val Val Leu His Ser Pro Ser Ala His
1075 1080 1085
Phe Thr Gly Arg Trp Asp Asp Arg Ser Cys Thr Glu Glu Thr His Gly
1090 1095 1100
Phe Ile Cys Gln Lys Gly Thr Asp Pro Ser Leu Ser Pro Ser Pro Ala
1105 1110 1115 1120
Ala Leu Pro Pro Ala Pro Gly Thr Glu Leu Ser Tyr Leu Asn Gly Thr
1125 1130 1135
Phe Arg Leu Leu Gln Lys Pro Leu Arg Trp His Asp Ala Leu Leu Leu
1140 1145 1150
Cys Glu Ser His Asn Ala Ser Leu Ala Tyr Val Pro Asp Pro Tyr Thr
1155 1160 1165
Gln Ala Phe Leu Thr Gln Ala Ala Arg Gly Leu Arg Thr Pro Leu Trp
1170 1175 1180

```
Ile Gly Leu Ala Gly Glu Glu Gly Ser Arg Arg Tyr Ser Trp Val Ser
1185                1190                1195                1200
Glu Glu Pro Leu Asn Tyr Val Gly Trp Gln Asp Gly Glu Pro Gln Gln
                1205                1210                1215
Pro Gly Gly Cys Thr Tyr Val Asp Val Asp Gly Ala Trp Arg Thr Thr
            1220                1225                1230
Ser Cys Asp Thr Lys Leu Gln Gly Ala Val Cys Gly Val Ser Ser Gly
        1235                1240                1245
Pro Pro Pro Pro Arg Arg Ile Ser Tyr His Gly Ser Cys Pro Gln Gly
    1250                1255                1260
Leu Ala Asp Ser Ala Trp Ile Pro Phe Arg Glu His Cys Tyr Ser Phe
1265                1270                1275                1280
His Met Glu Leu Leu Leu Gly His Lys Glu Ala Arg Gln Arg Cys Gln
                1285                1290                1295
Arg Ala Gly Gly Ala Val Leu Ser Ile Leu Asp Glu Met Glu Asn Val
            1300                1305                1310
Phe Val Trp Glu His Leu Gln Ser Tyr Glu Gly Gln Ser Arg Gly Ala
        1315                1320                1325
Trp Leu Gly Met Asn Phe Asn Pro Lys Gly Gly Thr Leu Val Trp Gln
    1330                1335                1340
Asp Asn Thr Ala Val Asn Tyr Ser Asn Trp Gly Pro Pro Gly Leu Gly
1345                1350                1355                1360
Pro Ser Met Leu Ser His Asn Ser Cys Tyr Trp Ile Gln Ser Asn Ser
                1365                1370                1375
Gly Leu Trp Arg Pro Gly Ala Cys Thr Asn Ile Thr Met Gly Val Val
            1380                1385                1390
Cys Lys Leu Pro Arg Ala Glu Gln Ser Ser Phe Ser Pro Ser Ala Leu
        1395                1400                1405
Pro Glu Asn Pro Ala Ala Leu Val Val Val Leu Met Ala Val Leu Leu
    1410                1415                1420
Leu Leu Ala Leu Leu Thr Ala Ala Leu Ile Leu Tyr Arg Arg Arg Gln
1425                1430                1435                1440
Ser Ile Glu Arg Gly Ala Phe Glu Gly Ala Arg Tyr Ser Arg Ser Ser
                1445                1450                1455
Ser Ser Pro Thr Glu Ala Thr Glu Lys Asn Ile Leu Val Ser Asp Met
            1460                1465                1470
Glu Met Asn Glu Gln Gln Glu
        1475
```

<210> 239
<211> 6127
<212> DNA
<213> Homo sapiens

<400> 239

```
ctgctccttg caccccgctc cctgcctgga cacaggctca ctcgctgcct tcttctgggg      60
gaaaccagct tcttgccagc cacagctgct gcctccgcca ctggccaccg cccctgtcct     120
gggagtccct tggcccagac acccacctga cttagtggct cctctgcagg aaaggtggct     180
gccccctgcg ttcctccatc caaccatgag ctggtgccca tcaccactga gaatgcacca     240
aagaatgtag tggacaaggg agaaggagcc tcccggggtg gaaacacacg gaaaagcctc     300
gaggacaacg gctccaccag ggtcaccccg agtgtccagc cccacctcca gcccatcaga     360
aacatgagtg tgagccggac catggaggac agctgtgagc tggacctggt gtacgtcaca     420
gagaggatca tcgctgtctc cttccccagc acagccaatg aggagaactt ccggagcaac     480
ctccgtgagg tggcgcagat gctcaagtcc aaacatggag gcaactacct gctgttcaac     540
ctctctgagc ggagacctga catcacgaag ctccatgcca aggtactgga atttggctgg     600
cccgacctcc acaccccagc cctggagaag atctgcagca tctgtaaggc catggacaca     660
tggctcaatg cagaccctca caatgtcgtt gttctacaca acaagggaaa ccgaggcagg     720
ataggagttg tcatcgcggc ttacatgcac tacagcaaca tttctgccag tgcggaccag     780
gctctggacc ggtttgcaat gaagcggttc tatgaggata agattgtgcc cattggccag     840
ccatcccaaa gaaggtacgt gcattacttc agtggcctgc tctccggctc catcaaaata     900
aacaacaagc ccttgtttct gcaccacgtg atcatgcacg gcatccccaa ctttgagtct     960
```

aaaggaggat gtcggccatt tctccgcatc taccaggcca tgcaacctgt gtacacatct 1020
ggcatctaca acatcccagg agacagccag actagcgtct gcatcaccat cgagccagga 1080
ctgctcttga agggagacat cttgctgaag tgctaccaca agaagttccg aagcccagcc 1140
cgagacgtca tcttccgtgt gcagttccac acctgtgcca tccatgacct gggggttgtc 1200
tttgggaagg aggaccttga tgatgctttc aaagatgatc gatttccaga gtatggcaaa 1260
gtggagtttg tattttctta tgggccagag aaaattcaag gcatggagca cctggagaac 1320
gggccgagcg tgtctgtgga ctataacacc tctgaccccc tcatccgctg ggactcctac 1380
gacaacttca gtgggcatcg agatgacggc atggaggagg tggtgggaca cacgcagggg 1440
ccactagatg ggagcctgta tgctaaggtg aagaagaaag actccctgca cggcagcacc 1500
ggggctgtta atgccacacg tcctacactg tcggccaccc ccaaccacgt ggaacacacg 1560
ctttctgtga gcagcgactc gggcaactcc acagcctcca ccaagaccga caagaccgac 1620
gagcctgtcc ccggggcctc cagtgccact gctgccttga gtccccagga gaagcgggag 1680
ctggaccgcc tgctgagtgg ctttggctta gagcgagaga agcaaggcgc catgtaccac 1740
acccagcacc tcaggtcccg cccagcaggg ggctcggctg tgccctcctc tggacgccac 1800
gttgtcccag cccaggttca tgtcaatggt ggggcgttag catctgagcg ggagacagac 1860
atcctggacg atgaattgcc aaaccaggat ggtcacagtg cgggcagcat gggcacactc 1920
tcttctctgg acggggtcac caacaccagt gaggggggct acccagaggc cctgtcccca 1980
ctgaccaacg gtctggacaa gtcctacccc atggagccta tggtcaatgg aggaggctac 2040
ccctacgagt ctgccagccg ggcggggcct gcccatgctg gccacacggc ccccatgcgg 2100
ccctcctact ctgcacagga gggtttagct ggctaccaga gggaggggcc ccacccagcc 2160
tggccacagc cagtgaccac ctcccactat gcccatgacc ccagcggtat gttccgctct 2220
caatcctttt cggaagctga accccagctg cccccagctc cggtccgagg gggaagcagc 2280
cgggaggctg tgcaaagggg actgaattcg tggcagcagc agcagcagca gcagcagcag 2340
cctcgcccac ctccacgcca gcaggaaaga gcccacttgg agagtcttgt agccagcagg 2400
cccagccctc agccattggc agagaccccc atccccagtc tccctgagtt cccgcgagca 2460
gcctcccagc aggagattga acagtccatc gaaacactca atatgctgat gctggacctg 2520
gagccagcct ccgctgctgc cccactacac aagtcccaga gtgtccccgg ggcctggcca 2580
ggggcttctc cactctcctc ccagcccctc tctggatcct cccgtcagtc ccatccactg 2640
acccagtcca gatctggcta tatccccagt gggcattcgt tgggaacccc tgagccagcc 2700
ccacgggcct ctctggagtc tgtccctcct ggcaggtctt actcacctta tgactatcag 2760
ccatgtttgg ctgggcctaa ccaggatttc cattcaaaga gcccagcctc ttcctccttg 2820
cctgccttcc ttccgaccac ccacagccct ccagggcctc agcaaccccc agcctctctc 2880
cctggcctca ctgctcagcc tctgctctca ccaaaggaag cgacttcaga cccctcccgg 2940
actccagagg aggagccatt gaatttagaa gggctggtgg cccacagggt agcaggggta 3000
caggctcggg agaagcagcc tgcagagccc ccagcccctc tgcggaggcg ggcggccagt 3060
gatggacagt atgagaacca gtctccagaa gccacatccc ctcgtagccc tggggttcgc 3120
tcccctgtcc agtgtgtctc cccggagctg gctcttacca tcgctctcaa tcctggaggg 3180
cggcccaaag agccccattt gcacagctac aaggaggcct tcgaggagat ggagggaacc 3240
tccccgagca gcccaccacc cagtggggtg cggtcccccc cgggtctggc caagacaccc 3300
ctgtctgctc tgggcctgaa acctcacaac ccagcggaca tcctgttgca ccccacagga 3360
gttaccagaa gacggatcca gccagaggaa gatgagggga aggtggtggt caggctgtca 3420
gaagagcccc ggagctatgt ggagtctgtg gcacggacag cggtggctgg accccgagct 3480
caggactctg agcccaagag ctttagtgct ccagccaccc aggcctatgg ccatgagata 3540
cccctgagga acgggaccct gggtggctcc tttgtctccc ccagcccccc ctccaccagc 3600
agccccatcc tcagtgctga cagcacttca gtggggagtt tcccgtcggg agagagcagt 3660
gaccagggtc cccggacgcc cacccagcct ctgttggagt ctggcttccg ctcaggcagc 3720
ctgggacagc ccagcccatc tgcccagaga aactaccaga gctcttctcc tctcccgact 3780
gtgggcagta gctacagcag ccccgactac tcacttcagc atttcagctc ctctccggaa 3840
agccaggccc gagctcagtt cagtgtggct ggcgtccaca cggtgcctgg gagccctcag 3900
gcgcgccaca gaacagtggg caccaacact ccccctagtc ctggcttcgg ccggcgggcc 3960
atcaatccca gcatggctgc ccccagcagt cccagtttga gccatcacca gatgatgggt 4020
ccaccaggca ctggcttcca tggtagcact gtctccagcc cccagagcag tgcagcgacc 4080
accccgggga gccccagcct gtgtcggcac ccagcagggg tctaccaggt ttctggcctc 4140
cacaacaaag tggccaccac cccggggagt cccagcctgg gccggcaccc tggggctcac 4200
caaggcaacc tggcctccgg tcttcatagc aatgcaatag ccagccctgg aagccccagc 4260
ctgggccgtc acctcggagg gtctggatct gtggttcccg gcagcccctg cttggaccgg 4320
catgtggcct atggcggcta ttctaccccg gaggatcgga gacccacact gtcccggcag 4380
agcagtgcct ctggctacca ggctccttcc acgccctcct tccctgtctc ccctgcctac 4440
taccctggcc tgagcagccc tgccacctcc ccgtcaccag actccgcagc cttccggcaa 4500
gggagcccaa caccagcctt gccagagaag cgaaggatgt cagtgggaga ccgggcaggc 4560
agcctcccca actatgccac catcaatggg aaggttgctt cgcctgtgcc cagcggcatg 4620

```
tccagtccca gcgggggcag caccgtctcc ttctcccaca ctctgcccga cttctccaag    4680
tactccatgc cagacaacag cccggagacg cgggctaaag tgaagtttgt ccaggacact    4740
tctaagtatt ggtacaagcc tgagatctcc agggagcagg ccatcgcgct cctcaaggac    4800
caggagccgg gggccttcat catccgcgac agtcactcct tccgaggcgc gtacgggctg    4860
gccatgaagg tgtcttcgcc acctccaacc atcatgcagc agaataaaaa aggagacatg    4920
acccatgagc tggtcaggca ttttctgata gagactggcc ccagaggagt caagctcaag    4980
ggctgcccca atgagccaaa cttcggatcg ctgtctgccc tggtctacca gcactccatc    5040
atcccattgg ccctgccttg caagctggtc attccaaacc gagaccccac agatgaatcg    5100
aaagatagct ccggccctgc caactcaact gcagacctgc tgaaacaagg ggcagcctgc    5160
aatgtgctct tcatcaactc tgtggacatg gagtcactca ctgggccaca ggccatctct    5220
aaagccacat ctgagacgtt ggctgcagac cccacgccag ctgccaccat cgttcacttc    5280
aaagtctctg cccagggaat cactctgact gacaaccaga gaaagctctt tttcagacgc    5340
cactaccctc tcaacactgt caccttctgt gacctggatc cacaggaaag aaagtggatg    5400
aaaacagagg gtggtgcccc tgctaagctc ttcggcttcg tggcccggaa gcagggcagc    5460
accacggaca acgcctgcca cctctttgct gagcttgacc ccaaccagcc ggcctctgcc    5520
atcgtcaact tcgtctccaa ggtcatgctg aatgccggcc aaaagagatg aaccctgccc    5580
cttgcccagg gccagtgcca tggggaaggg gcttgtgggg aggggaccca tgaatcctga    5640
ccactcttga acccagaagg aggactttgg gccaatttcg gaggagagaa gaaagtgcaa    5700
cgtggggaga gggaagtgaa ttgcagaggg gaggggggaaa agagagagag agagagagag    5760
agagagagag agagagagaa agatggagga gaagaacttg gattcccctg ggtagatgga    5820
aactgcaaaa acccaaagcc tccaaaacta accaggtcca cctaacaccc cctccctccc    5880
ctaagaagat ggatgtcctc aaaagagaag gaacaaacct ccttgggaat ccacattttt    5940
tgggggaatg gaaaagctct gtctccctaa ctcaactgct ttgcaagggg aaatcaagct    6000
gggagaatct ttttctggcc acctgtaggg taggttgtca aaccaaacag agccaccgtg    6060
ggacatcaag tggaagaact tgtttgcttg aaagtatctc agacccaagg cacctcaggt    6120
ctctttg                                                             6127
```

<210> 240
<211> 1732
<212> PRT
<213> Homo sapiens

<400> 240

```
Met Ser Val Ser Arg Thr Met Glu Asp Ser Cys Glu Leu Asp Leu Val
 1               5                  10                  15
Tyr Val Thr Glu Arg Ile Ile Ala Val Ser Phe Pro Ser Thr Ala Asn
            20                  25                  30
Glu Glu Asn Phe Arg Ser Asn Leu Arg Glu Val Ala Gln Met Leu Lys
        35                  40                  45
Ser Lys His Gly Gly Asn Tyr Leu Leu Phe Asn Leu Ser Glu Arg Arg
    50                  55                  60
Pro Asp Ile Thr Lys Leu His Ala Lys Val Leu Glu Phe Gly Trp Pro
65                  70                  75                  80
Asp Leu His Thr Pro Ala Leu Glu Lys Ile Cys Ser Ile Cys Lys Ala
                85                  90                  95
Met Asp Thr Trp Leu Asn Ala Asp Pro His Asn Val Val Val Leu His
            100                 105                 110
Asn Lys Gly Asn Arg Gly Arg Ile Gly Val Val Ile Ala Ala Tyr Met
        115                 120                 125
His Tyr Ser Asn Ile Ser Ala Ser Ala Asp Gln Ala Leu Asp Arg Phe
    130                 135                 140
Ala Met Lys Arg Phe Tyr Glu Asp Lys Ile Val Pro Ile Gly Gln Pro
145                 150                 155                 160
Ser Gln Arg Arg Tyr Val His Tyr Phe Ser Gly Leu Leu Ser Gly Ser
                165                 170                 175
Ile Lys Ile Asn Asn Lys Pro Leu Phe Leu His His Val Ile Met His
            180                 185                 190
Gly Ile Pro Asn Phe Glu Ser Lys Gly Gly Cys Arg Pro Phe Leu Arg
        195                 200                 205
```

Ile Tyr Gln Ala Met Gln Pro Val Tyr Thr Ser Gly Ile Tyr Asn Ile
210 215 220
Pro Gly Asp Ser Gln Thr Ser Val Cys Ile Thr Ile Glu Pro Gly Leu
225 230 235 240
Leu Leu Lys Gly Asp Ile Leu Leu Lys Cys Tyr His Lys Lys Phe Arg
245 250 255
Ser Pro Ala Arg Asp Val Ile Phe Arg Val Gln Phe His Thr Cys Ala
260 265 270
Ile His Asp Leu Gly Val Val Phe Gly Lys Glu Asp Leu Asp Asp Ala
275 280 285
Phe Lys Asp Asp Arg Phe Pro Glu Tyr Gly Lys Val Glu Phe Val Phe
290 295 300
Ser Tyr Gly Pro Glu Lys Ile Gln Gly Met Glu His Leu Glu Asn Gly
305 310 315 320
Pro Ser Val Ser Val Asp Tyr Asn Thr Ser Asp Pro Leu Ile Arg Trp
325 330 335
Asp Ser Tyr Asp Asn Phe Ser Gly His Arg Asp Asp Gly Met Glu Glu
340 345 350
Val Val Gly His Thr Gln Gly Pro Leu Asp Gly Ser Leu Tyr Ala Lys
355 360 365
Val Lys Lys Lys Asp Ser Leu His Gly Ser Thr Gly Ala Val Asn Ala
370 375 380
Thr Arg Pro Thr Leu Ser Ala Thr Pro Asn His Val Glu His Thr Leu
385 390 395 400
Ser Val Ser Ser Asp Ser Gly Asn Ser Thr Ala Ser Thr Lys Thr Asp
405 410 415
Lys Thr Asp Glu Pro Val Pro Gly Ala Ser Ser Ala Thr Ala Ala Leu
420 425 430
Ser Pro Gln Glu Lys Arg Glu Leu Asp Arg Leu Leu Ser Gly Phe Gly
435 440 445
Leu Glu Arg Glu Lys Gln Gly Ala Met Tyr His Thr Gln His Leu Arg
450 455 460
Ser Arg Pro Ala Gly Gly Ser Ala Val Pro Ser Ser Gly Arg His Val
465 470 475 480
Val Pro Ala Gln Val His Val Asn Gly Gly Ala Leu Ala Ser Glu Arg
485 490 495
Glu Thr Asp Ile Leu Asp Asp Glu Leu Pro Asn Gln Asp Gly His Ser
500 505 510
Ala Gly Ser Met Gly Thr Leu Ser Ser Leu Asp Gly Val Thr Asn Thr
515 520 525
Ser Glu Gly Gly Tyr Pro Glu Ala Leu Ser Pro Leu Thr Asn Gly Leu
530 535 540
Asp Lys Ser Tyr Pro Met Glu Pro Met Val Asn Gly Gly Gly Tyr Pro
545 550 555 560
Tyr Glu Ser Ala Ser Arg Ala Gly Pro Ala His Ala Gly His Thr Ala
565 570 575
Pro Met Arg Pro Ser Tyr Ser Ala Gln Glu Gly Leu Ala Gly Tyr Gln
580 585 590
Arg Glu Gly Pro His Pro Ala Trp Pro Gln Pro Val Thr Thr Ser His
595 600 605
Tyr Ala His Asp Pro Ser Gly Met Phe Arg Ser Gln Ser Phe Ser Glu
610 615 620
Ala Glu Pro Gln Leu Pro Pro Ala Pro Val Arg Gly Gly Ser Ser Arg
625 630 635 640
Glu Ala Val Gln Arg Gly Leu Asn Ser Trp Gln Gln Gln Gln Gln Gln
645 650 655
Gln Gln Gln Pro Arg Pro Pro Pro Arg Gln Gln Glu Arg Ala His Leu
660 665 670
Glu Ser Leu Val Ala Ser Arg Pro Ser Pro Gln Pro Leu Ala Glu Thr
675 680 685
Pro Ile Pro Ser Leu Pro Glu Phe Pro Arg Ala Ala Ser Gln Gln Glu

690 695 700
Ile Glu Gln Ser Ile Glu Thr Leu Asn Met Leu Met Leu Asp Leu Glu
705 710 715 720
Pro Ala Ser Ala Ala Ala Pro Leu His Lys Ser Gln Ser Val Pro Gly
725 730 735
Ala Trp Pro Gly Ala Ser Pro Leu Ser Ser Gln Pro Leu Ser Gly Ser
740 745 750
Ser Arg Gln Ser His Pro Leu Thr Gln Ser Arg Ser Gly Tyr Ile Pro
755 760 765
Ser Gly His Ser Leu Gly Thr Pro Glu Pro Ala Pro Arg Ala Ser Leu
770 775 780
Glu Ser Val Pro Pro Gly Arg Ser Tyr Ser Pro Tyr Asp Tyr Gln Pro
785 790 795 800
Cys Leu Ala Gly Pro Asn Gln Asp Phe His Ser Lys Ser Pro Ala Ser
805 810 815
Ser Ser Leu Pro Ala Phe Leu Pro Thr Thr His Ser Pro Pro Gly Pro
820 825 830
Gln Gln Pro Pro Ala Ser Leu Pro Gly Leu Thr Ala Gln Pro Leu Leu
835 840 845
Ser Pro Lys Glu Ala Thr Ser Asp Pro Ser Arg Thr Pro Glu Glu Glu
850 855 860
Pro Leu Asn Leu Glu Gly Leu Val Ala His Arg Val Ala Gly Val Gln
865 870 875 880
Ala Arg Glu Lys Gln Pro Ala Glu Pro Pro Ala Pro Leu Arg Arg Arg
885 890 895
Ala Ala Ser Asp Gly Gln Tyr Glu Asn Gln Ser Pro Glu Ala Thr Ser
900 905 910
Pro Arg Ser Pro Gly Val Arg Ser Pro Val Gln Cys Val Ser Pro Glu
915 920 925
Leu Ala Leu Thr Ile Ala Leu Asn Pro Gly Gly Arg Pro Lys Glu Pro
930 935 940
His Leu His Ser Tyr Lys Glu Ala Phe Glu Glu Met Glu Gly Thr Ser
945 950 955 960
Pro Ser Ser Pro Pro Pro Ser Gly Val Arg Ser Pro Pro Gly Leu Ala
965 970 975
Lys Thr Pro Leu Ser Ala Leu Gly Leu Lys Pro His Asn Pro Ala Asp
980 985 990
Ile Leu Leu His Pro Thr Gly Val Thr Arg Arg Arg Ile Gln Pro Glu
995 1000 1005
Glu Asp Glu Gly Lys Val Val Val Arg Leu Ser Glu Glu Pro Arg Ser
1010 1015 1020
Tyr Val Glu Ser Val Ala Arg Thr Ala Val Ala Gly Pro Arg Ala Gln
1025 1030 1035 1040
Asp Ser Glu Pro Lys Ser Phe Ser Ala Pro Ala Thr Gln Ala Tyr Gly
1045 1050 1055
His Glu Ile Pro Leu Arg Asn Gly Thr Leu Gly Gly Ser Phe Val Ser
1060 1065 1070
Pro Ser Pro Leu Ser Thr Ser Ser Pro Ile Leu Ser Ala Asp Ser Thr
1075 1080 1085
Ser Val Gly Ser Phe Pro Ser Gly Glu Ser Ser Asp Gln Gly Pro Arg
1090 1095 1100
Thr Pro Thr Gln Pro Leu Leu Glu Ser Gly Phe Arg Ser Gly Ser Leu
1105 1110 1115 1120
Gly Gln Pro Ser Pro Ser Ala Gln Arg Asn Tyr Gln Ser Ser Ser Pro
1125 1130 1135
Leu Pro Thr Val Gly Ser Ser Tyr Ser Ser Pro Asp Tyr Ser Leu Gln
1140 1145 1150
His Phe Ser Ser Ser Pro Glu Ser Gln Ala Arg Ala Gln Phe Ser Val
1155 1160 1165
Ala Gly Val His Thr Val Pro Gly Ser Pro Gln Ala Arg His Arg Thr
1170 1175 1180

Val Gly Thr Asn Thr Pro Pro Ser Pro Gly Phe Gly Arg Arg Ala Ile
1185 1190 1195 1200
Asn Pro Ser Met Ala Ala Pro Ser Ser Pro Ser Leu Ser His His Gln
1205 1210 1215
Met Met Gly Pro Pro Gly Thr Gly Phe His Gly Ser Thr Val Ser Ser
1220 1225 1230
Pro Gln Ser Ser Ala Ala Thr Thr Pro Gly Ser Pro Ser Leu Cys Arg
1235 1240 1245
His Pro Ala Gly Val Tyr Gln Val Ser Gly Leu His Asn Lys Val Ala
1250 1255 1260
Thr Thr Pro Gly Ser Pro Ser Leu Gly Arg His Pro Gly Ala His Gln
1265 1270 1275 1280
Gly Asn Leu Ala Ser Gly Leu His Ser Asn Ala Ile Ala Ser Pro Gly
1285 1290 1295
Ser Pro Ser Leu Gly Arg His Leu Gly Gly Ser Gly Ser Val Val Pro
1300 1305 1310
Gly Ser Pro Cys Leu Asp Arg His Val Ala Tyr Gly Gly Tyr Ser Thr
1315 1320 1325
Pro Glu Asp Arg Arg Pro Thr Leu Ser Arg Gln Ser Ser Ala Ser Gly
1330 1335 1340
Tyr Gln Ala Pro Ser Thr Pro Ser Phe Pro Val Ser Pro Ala Tyr Tyr
1345 1350 1355 1360
Pro Gly Leu Ser Ser Pro Ala Thr Ser Pro Ser Pro Asp Ser Ala Ala
1365 1370 1375
Phe Arg Gln Gly Ser Pro Thr Pro Ala Leu Pro Glu Lys Arg Arg Met
1380 1385 1390
Ser Val Gly Asp Arg Ala Gly Ser Leu Pro Asn Tyr Ala Thr Ile Asn
1395 1400 1405
Gly Lys Val Ala Ser Pro Val Pro Ser Gly Met Ser Ser Pro Ser Gly
1410 1415 1420
Gly Ser Thr Val Ser Phe Ser His Thr Leu Pro Asp Phe Ser Lys Tyr
1425 1430 1435 1440
Ser Met Pro Asp Asn Ser Pro Glu Thr Arg Ala Lys Val Lys Phe Val
1445 1450 1455
Gln Asp Thr Ser Lys Tyr Trp Tyr Lys Pro Glu Ile Ser Arg Glu Gln
1460 1465 1470
Ala Ile Ala Leu Leu Lys Asp Gln Glu Pro Gly Ala Phe Ile Ile Arg
1475 1480 1485
Asp Ser His Ser Phe Arg Gly Ala Tyr Gly Leu Ala Met Lys Val Ser
1490 1495 1500
Ser Pro Pro Pro Thr Ile Met Gln Gln Asn Lys Lys Gly Asp Met Thr
1505 1510 1515 1520
His Glu Leu Val Arg His Phe Leu Ile Glu Thr Gly Pro Arg Gly Val
1525 1530 1535
Lys Leu Lys Gly Cys Pro Asn Glu Pro Asn Phe Gly Ser Leu Ser Ala
1540 1545 1550
Leu Val Tyr Gln His Ser Ile Ile Pro Leu Ala Leu Pro Cys Lys Leu
1555 1560 1565
Val Ile Pro Asn Arg Asp Pro Thr Asp Glu Ser Lys Asp Ser Ser Gly
1570 1575 1580
Pro Ala Asn Ser Thr Ala Asp Leu Leu Lys Gln Gly Ala Ala Cys Asn
1585 1590 1595 1600
Val Leu Phe Ile Asn Ser Val Asp Met Glu Ser Leu Thr Gly Pro Gln
1605 1610 1615
Ala Ile Ser Lys Ala Thr Ser Glu Thr Leu Ala Ala Asp Pro Thr Pro
1620 1625 1630
Ala Ala Thr Ile Val His Phe Lys Val Ser Ala Gln Gly Ile Thr Leu
1635 1640 1645
Thr Asp Asn Gln Arg Lys Leu Phe Phe Arg Arg His Tyr Pro Leu Asn
1650 1655 1660
Thr Val Thr Phe Cys Asp Leu Asp Pro Gln Glu Arg Lys Trp Met Lys

```
1665                1670                1675                1680
Thr Glu Gly Gly Ala Pro Ala Lys Leu Phe Gly Phe Val Ala Arg Lys
                1685                1690                1695
Gln Gly Ser Thr Thr Cys His Leu Phe Ala Glu Leu Asp Pro Asn Gln
            1700                1705                1710
Pro Ala Ser Ala Ile Val Asn Phe Val Ser Lys Val Met Leu Asn Ala
        1715                1720                1725
Gly Gln Lys Arg
    1730
```

<210> 241
<211> 3557
<212> DNA
<213> Homo sapiens

<400> 241

```
atgcccggcg tggcccgcct gccgctgctg ctcgggctgc tgctgctccc gcgtcccggc      60
cggccgctgg acttggccga ctacacctat gacctggcgg aggaggacga ctcggagccc     120
ctcaactaca aagacccctg caaggcggct gcctttcttg gggacattgc cctggacgaa     180
gaggacctga gggccttcca ggtacagcag gctgtggatc tcagacggca cacagctcgt     240
aagtcctcca tcaaagctgc agttccagga aacacttcta cccccagctg ccagagcacc     300
aacgggcagc ctcagagggg agcctgtggg agatggagag gtagatcccg tagccggcgg     360
gcggcgacgt cccgaccaga gcgtgtgtgg cccgatgggg tcatcccctt tgtcattggg     420
ggaaacttca ctggtagcca gagggcagtc ttccggcagg ccatgaggca ctgggagaag     480
cacacctgtg tcaccttcct ggagcgcact gacgaggaca gctatattgt gttcacctat     540
cgaccttgcg ggtgctgctc ctacgtgggt cgccgcggcg ggggccccca ggccatctcc     600
atcggcaaga actgtgacaa gttcggcatt gtggtccacg agctgggcca cgtcgtcggc     660
ttctggcacg aacacactcg gccagaccgg gaccgccacg tttccatcgt tcgtgagaac     720
atccagccag ggcaggagta taacttcctg aagatggagc ctcaggaggt ggagtccctg     780
ggggagacct atgacttcga cagcatcatg cattacgctc ggaacacatt ctccaggggc     840
atcttcctgg ataccattgt ccccaagtat gaggtgaacg gggtgaaacc tcccattggc     900
caaaggacac ggctcagcaa gggggacatt gcccaagccc gcaagcttta caagtgccca     960
gcctgtggag agaccctgca agacagcaca ggcaacttct cctcccctga ataccccaat    1020
ggctactctg ctcacatgca ctgcgtgtgg cgcatctctg tcacacccgg ggagaagatc    1080
atcctgaact tcacgtccct ggacctgtac cgcagccgcc tgtgctggta cgactatgtg    1140
gaggtccgag atggcttctg gaggaaggcg cccctccgag gccgcttctg cgggtccaaa    1200
ctccctgagc ctatcgtctc cactgacagc cgcctctggg ttgaattccg cagcagcagc    1260
aattgggttg gaaagggctt ctttgcagtc tacgaagcca tctgcggggg tgatgtgaaa    1320
aaggactatg gccacattca atcgcccaac tacccagacg attaccggcc cagcaaagtc    1380
tgcatctggc ggatccaggt gtctgagggc ttccacgtgg gcctcacatt ccagtccttt    1440
gagattgagc gccacgacag ctgtgcctac gactatctgg aggtgcgcga cgggcacagt    1500
gagagcagca ccctcatcgg gcgctactgt ggctatgaga agcctgatga catcaagagc    1560
acgtccagcc gcctctggct caagttcgtc tctgacgggt ccattaacaa agcgggcttt    1620
gccgtcaact ttttcaaaga ggtggacgag tgctctcggc ccaaccgcgg gggctgtgag    1680
cagcggtgcc tcaacaccct gggcagctac aagtgcagct gtgaccccgg gtacgagctg    1740
gccccagaca agcgccgctg tgaggctgct tgtggcggat tcctcaccaa gctcaacggc    1800
tccatcacca gcccgggctg gcccaaggag taccccccca acaagaactg catctggcag    1860
ctggtggccc ccacccagta ccgcatctcc ctgcagtttg acttctttga gacagagggc    1920
aatgatgtgt gcaagtacga cttcgtggag gtgcgcagtg gactcacagc tgactccaag    1980
ctgcatggca agttctgtgg ttctgagaag cccgaggtca tcacctccca gtacaacaac    2040
atgcgcgtgg agttcaagtc cgacaacacc gtgtccaaaa agggcttcaa ggcccacttc    2100
ttctcagaca aggacgagtg ctccaaggat aacggcggct gccagcagga ctgcgtcaac    2160
acgttcggca gttatgagtg ccaatgccgc agtggcttcg tcctccatga caacaagcac    2220
gactgcaaag aagccggctg tgaccacaag gtgacatcca ccagtggtac catcaccagc    2280
cccaactggc ctgacaagta tcccagcaag aaggagtgca cgtgggccat ctccagcacc    2340
cccgggcacc gggtcaagct gaccttcatg gagatggaca tcgagtccca gcctgagtgt    2400
gcctacgacc acctagaggt gttcgacggg cgagacgcca aggcccccgt cctcggccgc    2460
ttctgtggga gcaagaagcc cgagcccgtc ctggccacag gcagccgcat gttcctgcgc    2520
ttctactcag ataactcggt ccagcgaaag ggcttccagg cctcccacgc cacagagtgc    2580
gggggccagg tacgggcaga cgtgaagacc aaggaccttt actcccacgc ccagtttggc    2640
gacaacaact accctggggg tgtggactgt gagtgggtca ttgtggccga ggaaggctac    2700
```

ggcgtggagc tcgtgttcca gacctttgag gtggaggagg agaccgactg cggctatgac 2760
tacatggagc tcttcgacgg ctacgacagc acagccccca ggctggggcg ctactgtggc 2820
tcagggcctc ctgaggaggt gtactcggcg ggagattctg tcctggtgaa gttccactcg 2880
gatgacacca tcaccaaaaa aggtttccac ctgcgataca ccagcaccaa gttccaggac 2940
acactccaca gcaggaagtg accactgcct gagcaggggc ggggactgga gcctgctgcc 3000
cttggtcgcc tagactggat agtgggggtg ggcggaaggc aacgcaccat ccctctcccc 3060
caggccccag gacctgcagg gccaatggcc tggtgagact gtccatagga ggtgggggaa 3120
ctggactccg gcataagcca cttccccaca aacccccacc agcaaggggc tggggccagg 3180
gagcagagct tccacaagac atttcgaagt catcattcct ctcttagggg gccctgcctg 3240
gtggcaagag ggaatgtcag caggacccca tcgccatccc tgtgtctcta cacgctgtat 3300
tgtgtatcac cgggggcatt attttcattg taatgttcat ttcccacccc tgctccagcc 3360
tcgatttggt tttattttga gcccccattc caccacccca gtttcctggg gcacaagtgt 3420
ctgtgcatgt cccccaggag ccaccgtggg gagccgatgg ggaggggatg gagaaacaag 3480
acagggcttc tctcaggccc agtggccggt cagccacacc agggcaccgc agccaataaa 3540
ccgaaagtgt tacagcc 3557

<210> 242
<211> 986
<212> PRT
<213> Homo sapiens

<400> 242

```
Met Pro Gly Val Ala Arg Leu Pro Leu Leu Leu Gly Leu Leu Leu Leu
 1               5                  10                  15
Pro Arg Pro Gly Arg Pro Leu Asp Leu Ala Asp Tyr Thr Tyr Asp Leu
            20                  25                  30
Ala Glu Glu Asp Asp Ser Glu Pro Leu Asn Tyr Lys Asp Pro Cys Lys
        35                  40                  45
Ala Ala Ala Phe Leu Gly Asp Ile Ala Leu Asp Glu Glu Asp Leu Arg
    50                  55                  60
Ala Phe Gln Val Gln Gln Ala Val Asp Leu Arg Arg His Thr Ala Arg
65                  70                  75                  80
Lys Ser Ser Ile Lys Ala Ala Val Pro Gly Asn Thr Ser Thr Pro Ser
                85                  90                  95
Cys Gln Ser Thr Asn Gly Gln Pro Gln Arg Gly Ala Cys Gly Arg Trp
            100                 105                 110
Arg Gly Arg Ser Arg Ser Arg Arg Ala Ala Thr Ser Arg Pro Glu Arg
        115                 120                 125
Val Trp Pro Asp Gly Val Ile Pro Phe Val Ile Gly Gly Asn Phe Thr
    130                 135                 140
Gly Ser Gln Arg Ala Val Phe Arg Gln Ala Met Arg His Trp Glu Lys
145                 150                 155                 160
His Thr Cys Val Thr Phe Leu Glu Arg Thr Asp Glu Asp Ser Tyr Ile
                165                 170                 175
Val Phe Thr Tyr Arg Pro Cys Gly Cys Cys Ser Tyr Val Gly Arg Arg
            180                 185                 190
Gly Gly Gly Pro Gln Ala Ile Ser Ile Gly Lys Asn Cys Asp Lys Phe
        195                 200                 205
Gly Ile Val Val His Glu Leu Gly His Val Val Gly Phe Trp His Glu
    210                 215                 220
His Thr Arg Pro Asp Arg Asp Arg His Val Ser Ile Val Arg Glu Asn
225                 230                 235                 240
Ile Gln Pro Gly Gln Glu Tyr Asn Phe Leu Lys Met Glu Pro Gln Glu
                245                 250                 255
Val Glu Ser Leu Gly Glu Thr Tyr Asp Phe Asp Ser Ile Met His Tyr
            260                 265                 270
Ala Arg Asn Thr Phe Ser Arg Gly Ile Phe Leu Asp Thr Ile Val Pro
        275                 280                 285
Lys Tyr Glu Val Asn Gly Val Lys Pro Pro Ile Gly Gln Arg Thr Arg
    290                 295                 300
Leu Ser Lys Gly Asp Ile Ala Gln Ala Arg Lys Leu Tyr Lys Cys Pro
```

```
305                 310                 315                 320
Ala Cys Gly Glu Thr Leu Gln Asp Ser Thr Gly Asn Phe Ser Ser Pro
                325                 330                 335
Glu Tyr Pro Asn Gly Tyr Ser Ala His Met His Cys Val Trp Arg Ile
            340                 345                 350
Ser Val Thr Pro Gly Glu Lys Ile Ile Leu Asn Phe Thr Ser Leu Asp
        355                 360                 365
Leu Tyr Arg Ser Arg Leu Cys Trp Tyr Asp Tyr Val Glu Val Arg Asp
    370                 375                 380
Gly Phe Trp Arg Lys Ala Pro Leu Arg Gly Arg Phe Cys Gly Ser Lys
385                 390                 395                 400
Leu Pro Glu Pro Ile Val Ser Thr Asp Ser Arg Leu Trp Val Glu Phe
                405                 410                 415
Arg Ser Ser Ser Asn Trp Val Gly Lys Gly Phe Phe Ala Val Tyr Glu
            420                 425                 430
Ala Ile Cys Gly Gly Asp Val Lys Lys Asp Tyr Gly His Ile Gln Ser
        435                 440                 445
Pro Asn Tyr Pro Asp Asp Tyr Arg Pro Ser Lys Val Cys Ile Trp Arg
    450                 455                 460
Ile Gln Val Ser Glu Gly Phe His Val Gly Leu Thr Phe Gln Ser Phe
465                 470                 475                 480
Glu Ile Glu Arg His Asp Ser Cys Ala Tyr Asp Tyr Leu Glu Val Arg
                485                 490                 495
Asp Gly His Ser Glu Ser Ser Thr Leu Ile Gly Arg Tyr Cys Gly Tyr
            500                 505                 510
Glu Lys Pro Asp Asp Ile Lys Ser Thr Ser Ser Arg Leu Trp Leu Lys
        515                 520                 525
Phe Val Ser Asp Gly Ser Ile Asn Lys Ala Gly Phe Ala Val Asn Phe
    530                 535                 540
Phe Lys Glu Val Asp Glu Cys Ser Arg Pro Asn Arg Gly Gly Cys Glu
545                 550                 555                 560
Gln Arg Cys Leu Asn Thr Leu Gly Ser Tyr Lys Cys Ser Cys Asp Pro
                565                 570                 575
Gly Tyr Glu Leu Ala Pro Asp Lys Arg Arg Cys Glu Ala Ala Cys Gly
            580                 585                 590
Gly Phe Leu Thr Lys Leu Asn Gly Ser Ile Thr Ser Pro Gly Trp Pro
        595                 600                 605
Lys Glu Tyr Pro Pro Asn Lys Asn Cys Ile Trp Gln Leu Val Ala Pro
    610                 615                 620
Thr Gln Tyr Arg Ile Ser Leu Gln Phe Asp Phe Phe Glu Thr Glu Gly
625                 630                 635                 640
Asn Asp Val Cys Lys Tyr Asp Phe Val Glu Val Arg Ser Gly Leu Thr
                645                 650                 655
Ala Asp Ser Lys Leu His Gly Lys Phe Cys Gly Ser Glu Lys Pro Glu
            660                 665                 670
Val Ile Thr Ser Gln Tyr Asn Asn Met Arg Val Glu Phe Lys Ser Asp
        675                 680                 685
Asn Thr Val Ser Lys Lys Gly Phe Lys Ala His Phe Phe Ser Asp Lys
    690                 695                 700
Asp Glu Cys Ser Lys Asp Asn Gly Gly Cys Gln Gln Asp Cys Val Asn
705                 710                 715                 720
Thr Phe Gly Ser Tyr Glu Cys Gln Cys Arg Ser Gly Phe Val Leu His
                725                 730                 735
Asp Asn Lys His Asp Cys Lys Glu Ala Gly Cys Asp His Lys Val Thr
            740                 745                 750
Ser Thr Ser Gly Thr Ile Thr Ser Pro Asn Trp Pro Asp Lys Tyr Pro
        755                 760                 765
Ser Lys Lys Glu Cys Thr Trp Ala Ile Ser Ser Thr Pro Gly His Arg
    770                 775                 780
Val Lys Leu Thr Phe Met Glu Met Asp Ile Glu Ser Gln Pro Glu Cys
785                 790                 795                 800
```

```
Ala Tyr Asp His Leu Glu Val Phe Asp Gly Arg Asp Ala Lys Ala Pro
                805                 810                 815
Val Leu Gly Arg Phe Cys Gly Ser Lys Lys Pro Glu Pro Val Leu Ala
            820                 825                 830
Thr Gly Ser Arg Met Phe Leu Arg Phe Tyr Ser Asp Asn Ser Val Gln
        835                 840                 845
Arg Lys Gly Phe Gln Ala Ser His Ala Thr Glu Cys Gly Gly Gln Val
    850                 855                 860
Arg Ala Asp Val Lys Thr Lys Asp Leu Tyr Ser His Ala Gln Phe Gly
865                 870                 875                 880
Asp Asn Asn Tyr Pro Gly Gly Val Asp Cys Glu Trp Val Ile Val Ala
                885                 890                 895
Glu Glu Gly Tyr Gly Val Glu Leu Val Phe Gln Thr Phe Glu Val Glu
            900                 905                 910
Glu Glu Thr Asp Cys Gly Tyr Asp Tyr Met Glu Leu Phe Asp Gly Tyr
        915                 920                 925
Asp Ser Thr Ala Pro Arg Leu Gly Arg Tyr Cys Gly Ser Gly Pro Pro
    930                 935                 940
Glu Glu Val Tyr Ser Ala Gly Asp Ser Val Leu Val Lys Phe His Ser
945                 950                 955                 960
Asp Asp Thr Ile Thr Lys Lys Gly Phe His Leu Arg Tyr Thr Ser Thr
                965                 970                 975
Lys Phe Gln Asp Thr Leu His Ser Arg Lys
            980                 985
```

<210> 243
<211> 5015
<212> DNA
<213> Homo sapiens

<400> 243

```
gcgctccgca cctgggcact cccagcgatg cgcagcgggg cagcgccggc cccgccgatg      60
gagctgctgt tgctgccgcc gccgccgccc ggagcgcccc gctccgcccg cgccccgtgc     120
gcctgagcac cgagctcgcc cctcctccgc gctaactccg ccgcccgctc cccaggccgc     180
ccgcgctccc cgcgcgcctc ctcgggctcc acgcgtcttg ccccgcagag gcagcctcct     240
ccaggagcgg ggccctgcac accatggccc ccgggtgggc aggggtcggc gccgccgtgc     300
gcgcccgcct ggcgctggcc ttggcgctgg cgagcgtcct gagtgggcct ccagccgtcg     360
cctgccccac caagtgtacc tgctccgctg ccagcgtgga ctgccacggg ctgggcctcc     420
gcgcggttcc tcggggcatc ccccgcaacg ctgagcgcct tgacctggac agaaataata     480
tcaccaggat caccaagatg gacttcgctg ggctcaagaa cctccgagtc ttgcatctgg     540
aagacaacca ggtcagcgtc atcgagagag gcgccttcca ggacctgaag cagctagagc     600
gactgcgcct gaacaagaat aagctgcaag tccttccaga attgcttttc cagagcacgc     660
cgaagctcac cagactagat ttgagtgaaa accagatcca ggggatcccg aggaaggcgt     720
tccgcggcat caccgatgtg aagaacctgc aactggacaa caaccacatc agctgcattg     780
aagatggagc cttccgagcg ctgcgcgatt tggagatcct taccctcaac aacaacaaca     840
tcagtcgcat cctggtcacc agcttcaacc acatgccgaa gatccgaact ctgcgcctcc     900
actccaacca cctgtactgc gactgccacc tggcctggct ctcggattgg ctgcgacagc     960
gacggacagt tggccagttc acactctgca tggctcctgt gcatttgagg ggcttcaacg    1020
tggcggatgt gcagaagaag gagtacgtgt gcccagcccc ccactcggag cccccatcct    1080
gcaatgccaa ctccatctcc tgcccttcgc cctgcacgtg cagcaataac atcgtggact    1140
gtcgaggaaa gggcttgatg gagattcctg ccaacttgcc ggagggcatc gtcgaaatac    1200
gcctagaaca gaactccatc aaagccatcc ctgcaggagc cttcacccag tacaagaaac    1260
tgaagcgaat agacatcagc aagaatcaga tatcggatat tgctccagat gccttccagg    1320
gcctgaaatc actcacatcg ctggtcctgt atgggaacaa gatcaccgag attgccaagg    1380
gactgtttga tgggctggtg tccctacagc tgctcctcct caatgccaac aagatcaact    1440
gcctgcgggt gaacacgttt caggacctgc agaacctcaa cttgctctcc ctgtatgaca    1500
acaagctgca gaccatcagc aaggggctct tcgcccctct gcagtccatc cagacactcc    1560
acttagccca aaacccattt gtgtgcgact gccacttgaa gtggctggcc gactacctcc    1620
aggacaaccc catcgagaca agcggggccc gctgcagcag cccgcgccga ctcgccaaca    1680
agcgcatcag ccagatcaag agcaagaagt tccgctgctc aggctccgag gattaccgca    1740
gcaggttcag cagcgagtgc ttcatggacc tcgtgtgccc cgagaagtgt cgctgtgagg    1800
```

gcacgattgt ggactgctcc aaccagaagc tggtccgcat cccaagccac ctccctgaat 1860
atgtcaccga cctgcgactg aatgacaatg aggtatctgt tctggaggcc actggcatct 1920
tcaagaagtt gcccaacctg cggaaaataa atctgagtaa caataagatc aaggaggtgc 1980
gagagggagc tttcgatgga gcagccagcg tgcaggagct gatgctgaca gggaaccagc 2040
tggagaccgt gcacgggcgc gtgttccgtg gcctcagtgg cctcaaaacc ttgatgctga 2100
ggagtaactt gatcggctgt gtgagtaatg acacctttgc cggcctgagt tcggtgagac 2160
tgctgtccct ctatgacaat cggatcacca ccatcacccc tggggccttc accacgcttg 2220
tctccctgtc caccataaac ctcctgtcca acccccttcaa ctgcaactgc cacctggcct 2280
ggctcggcaa gtggttgagg aagaggcgga tcgtcagtgg gaaccctagg tgccagaagc 2340
catttttcct caaggagatt cccatccagg atgtggccat ccaggacttc acctgtgatg 2400
gcaacgagga gagtagctgc cagctgagcc cgcgctgccc ggagcagtgc acctgtatgg 2460
agacagtggt gcgatgcagc aacaaggggc tccgcgccct ccccagaggc atgcccaagg 2520
atgtgaccga gctgtacctg gaaggaaacc acctaacagc cgtgcccaga gagctgtccg 2580
ccctccgaca cctgacgctt attgacctga gcaacaacag catcagcatg ctgaccaatt 2640
acaccttcag taacatgtct cacctctcca ctctgatcct gagctacaac cggctgaggt 2700
gcatccccgt ccacgccttc aacgggctgc ggtccctgcg agtgctaacc ctccatggca 2760
atgacatttc cagcgttcct gaaggctcct tcaacgacct cacatctctt tcccatctgg 2820
cgctgggaac caacccactc cactgtgact gcagtcttcg gtggctgtcg gagtgggtga 2880
aggcggggta caaggagcct ggcatcgccc gctgcagtag ccctgagccc atggctgaca 2940
ggctcctgct caccacccca acccaccgct tccagtgcaa agggccagtg gacatcaaca 3000
ttgtggccaa atgcaatgcc tgcctctcca gcccgtgcaa gaataacggg acatgcaccc 3060
aggaccctgt ggagctgtac cgctgtgcct gcccctacag ctacaagggc aaggactgca 3120
ctgtgcccat caacacctgc atccagaacc cctgtcagca tggaggcacc tgccacctga 3180
gtgacagcca caaggatggg ttcagctgct cctgccctct gggctttgag gggcagcggt 3240
gtgagatcaa cccagatgac tgtgaggaca acgactgcga aaacaatgcc acctgcgtgg 3300
acgggatcaa caactacgtg tgtatctgtc cgcctaacta cacaggtgag ctatgcgacg 3360
aggtgattga ccactgtgtg cctgagctga acctctgtca gcatgaggcc aagtgcatcc 3420
ccctggacaa aggattcagc tgcgagtgtg tccctggcta cagcgggaag ctctgtgaga 3480
cagacaatga tgactgtgtg gcccacaagt gccgccacgg ggcccagtgc gtggacacaa 3540
tcaatggcta cacatgcacc tgcccccagg gcttcagtgg acccttctgt gaacacccca 3600
cacccatggt cctactgcag accagcccat gcgaccagta cgagtgccag aacggggccc 3660
agtgcatcgt ggtgcagcag gagcccacct gccgctgccc accaggtttc gccggcccca 3720
gatgcgagaa gctcatcact gtcaacttcg tgggcaaaga ctcctacgtg gaactggcct 3780
ccgccaaggt ccgaccccag gccaacatct ccctgcaggt ggccactgac aaggacaacg 3840
gcatccttct ctacaaagga gacaatgacc ccctggcact ggagctgtac cagggccacg 3900
tgcggctggt ctatgacagc ctgagttccc ctccaaccac agtgtacagt gtggagacag 3960
tgaatgatgg gcagtttcac agtgtggagc tggtgacgct aaaccagacc ctgaacctag 4020
tagtggacaa aggaactcca aagagcctgg ggaagctcca gaagcagcca gcagtgggca 4080
tcaacagccc cctctacctt ggaggcatcc ccacctccac cggcctctcc gccttgcgcc 4140
agggcacgga ccggcctcta ggcggcttcc acggatgcat ccatgaggtg cgcatcaaca 4200
acgagctgca ggacttcaag gccctcccac cacagtccct gggggtgtca ccaggctgca 4260
agtcctgcac cgtgtgcaag cacggcctgt gccgctccgt ggagaaggac agcgtggtgt 4320
gcgagtgccg cccaggctgg accggcccac tctgcgatca ggaggcccgg gacccctgcc 4380
tcggccacag atgccaccat ggaaaatgtg tggcaactgg gacctcatac atgtgcaagt 4440
gtgccgaggg ctatggaggg gacttgtgtg acaacaagaa tgactctgcc aatgcctgct 4500
cagccttcaa gtgtcaccat gggcagtgcc acatctcaga ccaaggggag ccctactgcc 4560
tgtgccagcc cggctttagc ggcgagcact gccaacaaga gaatccgtgc ctgggacaag 4620
tagtccgaga ggtgatccgc cgccagaaag gttatgcatc atgtgccaca gcctccaagg 4680
tgcccatcat ggaatgtcgt gggggctgtg ggccccagtg ctgccagccc acccgcagca 4740
agcggcggaa atacgtcttc cagtgcacgg acggctcctc gtttgtagaa gaggtggaga 4800
gacacttaga gtgcggctgc ctcgcgtgtt cctaagcccc tgcccgcctg cctgccacct 4860
ctcggactcc agcttgatgg agttgggaca gccatgtggg acccccctggt gattcagcat 4920
gaaggaaatg aagctggaga ggaaggtaaa gaagaagaga atattaagta tattgtaaaa 4980
taaacaaaaa atagaactta tttttattat ggaaa 5015

<210> 244
<211> 1523
<212> PRT
<213> Homo sapiens

<400> 244

```
Met Ala Pro Gly Trp Ala Gly Val Gly Ala Ala Val Arg Ala Arg Leu
 1               5                  10                  15
Ala Leu Ala Leu Ala Leu Ala Ser Val Leu Ser Gly Pro Pro Ala Val
            20                  25                  30
Ala Cys Pro Thr Lys Cys Thr Cys Ser Ala Ala Ser Val Asp Cys His
        35                  40                  45
Gly Leu Gly Leu Arg Ala Val Pro Arg Gly Ile Pro Arg Asn Ala Glu
    50                  55                  60
Arg Leu Asp Leu Asp Arg Asn Asn Ile Thr Arg Ile Thr Lys Met Asp
65                  70                  75                  80
Phe Ala Gly Leu Lys Asn Leu Arg Val Leu His Leu Glu Asp Asn Gln
                85                  90                  95
Val Ser Val Ile Glu Arg Gly Ala Phe Gln Asp Leu Lys Gln Leu Glu
            100                 105                 110
Arg Leu Arg Leu Asn Lys Asn Lys Leu Gln Val Leu Pro Glu Leu Leu
        115                 120                 125
Phe Gln Ser Thr Pro Lys Leu Thr Arg Leu Asp Leu Ser Glu Asn Gln
    130                 135                 140
Ile Gln Gly Ile Pro Arg Lys Ala Phe Arg Gly Ile Thr Asp Val Lys
145                 150                 155                 160
Asn Leu Gln Leu Asp Asn Asn His Ile Ser Cys Ile Glu Asp Gly Ala
                165                 170                 175
Phe Arg Ala Leu Arg Asp Leu Glu Ile Leu Thr Leu Asn Asn Asn Asn
            180                 185                 190
Ile Ser Arg Ile Leu Val Thr Ser Phe Asn His Met Pro Lys Ile Arg
        195                 200                 205
Thr Leu Arg Leu His Ser Asn His Leu Tyr Cys Asp Cys His Leu Ala
    210                 215                 220
Trp Leu Ser Asp Trp Leu Arg Gln Arg Arg Thr Val Gly Gln Phe Thr
225                 230                 235                 240
Leu Cys Met Ala Pro Val His Leu Arg Gly Phe Asn Val Ala Asp Val
                245                 250                 255
Gln Lys Lys Glu Tyr Val Cys Pro Ala Pro His Ser Glu Pro Pro Ser
            260                 265                 270
Cys Asn Ala Asn Ser Ile Ser Cys Pro Ser Pro Cys Thr Cys Ser Asn
        275                 280                 285
Asn Ile Val Asp Cys Arg Gly Lys Gly Leu Met Glu Ile Pro Ala Asn
    290                 295                 300
Leu Pro Glu Gly Ile Val Glu Ile Arg Leu Glu Gln Asn Ser Ile Lys
305                 310                 315                 320
Ala Ile Pro Ala Gly Ala Phe Thr Gln Tyr Lys Lys Leu Lys Arg Ile
                325                 330                 335
Asp Ile Ser Lys Asn Gln Ile Ser Asp Ile Ala Pro Asp Ala Phe Gln
            340                 345                 350
Gly Leu Lys Ser Leu Thr Ser Leu Val Leu Tyr Gly Asn Lys Ile Thr
        355                 360                 365
Glu Ile Ala Lys Gly Leu Phe Asp Gly Leu Val Ser Leu Gln Leu Leu
    370                 375                 380
Leu Leu Asn Ala Asn Lys Ile Asn Cys Leu Arg Val Asn Thr Phe Gln
385                 390                 395                 400
Asp Leu Gln Asn Leu Asn Leu Leu Ser Leu Tyr Asp Asn Lys Leu Gln
                405                 410                 415
Thr Ile Ser Lys Gly Leu Phe Ala Pro Leu Gln Ser Ile Gln Thr Leu
            420                 425                 430
His Leu Ala Gln Asn Pro Phe Val Cys Asp Cys His Leu Lys Trp Leu
        435                 440                 445
Ala Asp Tyr Leu Gln Asp Asn Pro Ile Glu Thr Ser Gly Ala Arg Cys
    450                 455                 460
Ser Ser Pro Arg Arg Leu Ala Asn Lys Arg Ile Ser Gln Ile Lys Ser
```

```
465                 470                 475                 480
Lys Lys Phe Arg Cys Ser Gly Ser Glu Asp Tyr Arg Ser Arg Phe Ser
                485                 490                 495
Ser Glu Cys Phe Met Asp Leu Val Cys Pro Glu Lys Cys Arg Cys Glu
            500                 505                 510
Gly Thr Ile Val Asp Cys Ser Asn Gln Lys Leu Val Arg Ile Pro Ser
        515                 520                 525
His Leu Pro Glu Tyr Val Thr Asp Leu Arg Leu Asn Asp Asn Glu Val
    530                 535                 540
Ser Val Leu Glu Ala Thr Gly Ile Phe Lys Lys Leu Pro Asn Leu Arg
545                 550                 555                 560
Lys Ile Asn Leu Ser Asn Asn Lys Ile Lys Glu Val Arg Glu Gly Ala
                565                 570                 575
Phe Asp Gly Ala Ala Ser Val Gln Glu Leu Met Leu Thr Gly Asn Gln
            580                 585                 590
Leu Glu Thr Val His Gly Arg Val Phe Arg Gly Leu Ser Gly Leu Lys
        595                 600                 605
Thr Leu Met Leu Arg Ser Asn Leu Ile Gly Cys Val Ser Asn Asp Thr
    610                 615                 620
Phe Ala Gly Leu Ser Ser Val Arg Leu Leu Ser Leu Tyr Asp Asn Arg
625                 630                 635                 640
Ile Thr Thr Ile Thr Pro Gly Ala Phe Thr Thr Leu Val Ser Leu Ser
                645                 650                 655
Thr Ile Asn Leu Leu Ser Asn Pro Phe Asn Cys Asn Cys His Leu Ala
            660                 665                 670
Trp Leu Gly Lys Trp Leu Arg Lys Arg Arg Ile Val Ser Gly Asn Pro
        675                 680                 685
Arg Cys Gln Lys Pro Phe Phe Leu Lys Glu Ile Pro Ile Gln Asp Val
    690                 695                 700
Ala Ile Gln Asp Phe Thr Cys Asp Gly Asn Glu Glu Ser Ser Cys Gln
705                 710                 715                 720
Leu Ser Pro Arg Cys Pro Glu Gln Cys Thr Cys Met Glu Thr Val Val
                725                 730                 735
Arg Cys Ser Asn Lys Gly Leu Arg Ala Leu Pro Arg Gly Met Pro Lys
            740                 745                 750
Asp Val Thr Glu Leu Tyr Leu Glu Gly Asn His Leu Thr Ala Val Pro
        755                 760                 765
Arg Glu Leu Ser Ala Leu Arg His Leu Thr Leu Ile Asp Leu Ser Asn
    770                 775                 780
Asn Ser Ile Ser Met Leu Thr Asn Tyr Thr Phe Ser Asn Met Ser His
785                 790                 795                 800
Leu Ser Thr Leu Ile Leu Ser Tyr Asn Arg Leu Arg Cys Ile Pro Val
                805                 810                 815
His Ala Phe Asn Gly Leu Arg Ser Leu Arg Val Leu Thr Leu His Gly
            820                 825                 830
Asn Asp Ile Ser Ser Val Pro Glu Gly Ser Phe Asn Asp Leu Thr Ser
        835                 840                 845
Leu Ser His Leu Ala Leu Gly Thr Asn Pro Leu His Cys Asp Cys Ser
    850                 855                 860
Leu Arg Trp Leu Ser Glu Trp Val Lys Ala Gly Tyr Lys Glu Pro Gly
865                 870                 875                 880
Ile Ala Arg Cys Ser Ser Pro Glu Pro Met Ala Asp Arg Leu Leu Leu
                885                 890                 895
Thr Thr Pro Thr His Arg Phe Gln Cys Lys Gly Pro Val Asp Ile Asn
            900                 905                 910
Ile Val Ala Lys Cys Asn Ala Cys Leu Ser Ser Pro Cys Lys Asn Asn
        915                 920                 925
Gly Thr Cys Thr Gln Asp Pro Val Glu Leu Tyr Arg Cys Ala Cys Pro
    930                 935                 940
Tyr Ser Tyr Lys Gly Lys Asp Cys Thr Val Pro Ile Asn Thr Cys Ile
945                 950                 955                 960
```

Gln Asn Pro Cys Gln His Gly Gly Thr Cys His Leu Ser Asp Ser His
965 970 975
Lys Asp Gly Phe Ser Cys Ser Cys Pro Leu Gly Phe Glu Gly Gln Arg
980 985 990
Cys Glu Ile Asn Pro Asp Asp Cys Glu Asp Asn Asp Cys Glu Asn Asn
995 1000 1005
Ala Thr Cys Val Asp Gly Ile Asn Asn Tyr Val Cys Ile Cys Pro Pro
1010 1015 1020
Asn Tyr Thr Gly Glu Leu Cys Asp Glu Val Ile Asp His Cys Val Pro
1025 1030 1035 1040
Glu Leu Asn Leu Cys Gln His Glu Ala Lys Cys Ile Pro Leu Asp Lys
1045 1050 1055
Gly Phe Ser Cys Glu Cys Val Pro Gly Tyr Ser Gly Lys Leu Cys Glu
1060 1065 1070
Thr Asp Asn Asp Asp Cys Val Ala His Lys Cys Arg His Gly Ala Gln
1075 1080 1085
Cys Val Asp Thr Ile Asn Gly Tyr Thr Cys Thr Cys Pro Gln Gly Phe
1090 1095 1100
Ser Gly Pro Phe Cys Glu His Pro Pro Pro Met Val Leu Leu Gln Thr
1105 1110 1115 1120
Ser Pro Cys Asp Gln Tyr Glu Cys Gln Asn Gly Ala Gln Cys Ile Val
1125 1130 1135
Val Gln Gln Glu Pro Thr Cys Arg Cys Pro Pro Gly Phe Ala Gly Pro
1140 1145 1150
Arg Cys Glu Lys Leu Ile Thr Val Asn Phe Val Gly Lys Asp Ser Tyr
1155 1160 1165
Val Glu Leu Ala Ser Ala Lys Val Arg Pro Gln Ala Asn Ile Ser Leu
1170 1175 1180
Gln Val Ala Thr Asp Lys Asp Asn Gly Ile Leu Leu Tyr Lys Gly Asp
1185 1190 1195 1200
Asn Asp Pro Leu Ala Leu Glu Leu Tyr Gln Gly His Val Arg Leu Val
1205 1210 1215
Tyr Asp Ser Leu Ser Ser Pro Pro Thr Thr Val Tyr Ser Val Glu Thr
1220 1225 1230
Val Asn Asp Gly Gln Phe His Ser Val Glu Leu Val Thr Leu Asn Gln
1235 1240 1245
Thr Leu Asn Leu Val Val Asp Lys Gly Thr Pro Lys Ser Leu Gly Lys
1250 1255 1260
Leu Gln Lys Gln Pro Ala Val Gly Ile Asn Ser Pro Leu Tyr Leu Gly
1265 1270 1275 1280
Gly Ile Pro Thr Ser Thr Gly Leu Ser Ala Leu Arg Gln Gly Thr Asp
1285 1290 1295
Arg Pro Leu Gly Gly Phe His Gly Cys Ile His Glu Val Arg Ile Asn
1300 1305 1310
Asn Glu Leu Gln Asp Phe Lys Ala Leu Pro Pro Gln Ser Leu Gly Val
1315 1320 1325
Ser Pro Gly Cys Lys Ser Cys Thr Val Cys Lys His Gly Leu Cys Arg
1330 1335 1340
Ser Val Glu Lys Asp Ser Val Val Cys Glu Cys Arg Pro Gly Trp Thr
1345 1350 1355 1360
Gly Pro Leu Cys Asp Gln Glu Ala Arg Asp Pro Cys Leu Gly His Arg
1365 1370 1375
Cys His His Gly Lys Cys Val Ala Thr Gly Thr Ser Tyr Met Cys Lys
1380 1385 1390
Cys Ala Glu Gly Tyr Gly Gly Asp Leu Cys Asp Asn Lys Asn Asp Ser
1395 1400 1405
Ala Asn Ala Cys Ser Ala Phe Lys Cys His His Gly Gln Cys His Ile
1410 1415 1420
Ser Asp Gln Gly Glu Pro Tyr Cys Leu Cys Gln Pro Gly Phe Ser Gly
1425 1430 1435 1440
Glu His Cys Gln Gln Glu Asn Pro Cys Leu Gly Gln Val Val Arg Glu

```
                1445                1450                1455
Val Ile Arg Arg Gln Lys Gly Tyr Ala Ser Cys Ala Thr Ala Ser Lys
            1460                1465                1470
Val Pro Ile Met Glu Cys Arg Gly Gly Cys Gly Pro Gln Cys Cys Gln
        1475                1480                1485
Pro Thr Arg Ser Lys Arg Arg Lys Tyr Val Phe Gln Cys Thr Asp Gly
    1490                1495                1500
Ser Ser Phe Val Glu Glu Val Glu Arg His Leu Glu Cys Gly Cys Leu
1505                1510                1515                1520
Ala Cys Ser
```

<210> 245
<211> 4227
<212> DNA
<213> Homo sapiens

<400> 245

```
gactgggagc aggcagcccg ggcggagcgg gccggtgccg aggacggccc caggcattgc      60
tctgccccgg gcattgcgcg gcgcgcgtga gggggatgcg gcaggaggcg gcgcggcggg     120
aggagtaggc ggcggcgccc tcgggaggga gctgcgcgcg ggccagacgg cgcccggagg     180
ctccgcagtg ccgccgccgt cgcccgggag gctccgcgcg ggagccatgt aaccctgcgg     240
cgggctccgg gctgctccgt ccttccccag ctcccgggct agcgcggcag cggggccacg     300
atgaagaagc agttcaatcg catgcgccag ctggccaacc agacggtggg cagggctgaa     360
aagacagaag ttttgagtga agaccttctt caggtggaga agcgtctgga gctggtgaaa     420
caggtgtccc acagcacgca caagaagctc accgcatgtc tgcagggcca gcaaggggca     480
gaggctgaca agcgctccaa aaagttgcct ttgacaacac tggctcagtg tctgatggag     540
gggtcagcta tcctgggaga tgacacactt cttgggaaga tgctgaaact ctgtggagag     600
acggaggaca agctggctca ggagctgata cattttgagt tgcaagtaga gagagacgtg     660
attgagcccc tgtttttgct ggcggaggtg gaaatcccaa atattcaaaa gcagaggaaa     720
cacttagcca agttggtgct ggacatggat tcctcacgaa ccaggtggca gcagacttcc     780
aagtcttcag gtttgtccag cagcttacag cctgcgggtg ccaaggctga tgccctcagg     840
gaagaaatgg aagaggctgc caacagagtg gagatttgca gggaccagct ctcagctgat     900
atgtacagtt ttgtggccaa agaaattgac tatgcaaact actttcaaac gctaatagaa     960
gtgcaagctg aataccacag gaagtccctg acactattgc aggctgtatt gcctcagatc    1020
aaagcacaac aggaggcctg ggtagagaag ccttccttcg ggaagccgct ggaggagcac    1080
ctcaccatca gcggccggga gatcgccttc cccatcgagg cgtgtgtgac catgctgctt    1140
gagtgtggga tgcaggagga gggactcttc cgagtagccc cctctgcctc caaactgaag    1200
aagctgaaag cggccctgga ctgctgcgtg gtggatgtgc aggagtactc ggcagacccc    1260
cacgcaattg caggagcttt gaaatcttac ctccgagagt tgccagaacc tcttatgacc    1320
tttgaactct atgatgagtg gatccaggct tccaatgtcc aggagcaaga caagaagctt    1380
caggctctat ggaatgcttg tgaaaagttg cccaaggcca atcacaacaa catccgatac    1440
ttgataaaat ttttatccaa gctgtcagaa tatcaagatg taaacaagat gactcccagt    1500
aatatggcaa ttgttttagg acccaacctc ctatggccac aagcagaagg gaacattaca    1560
gagatgatga ccacagtgtc gctgcaaatt gttgggatca ttgaacctat catccagcat    1620
gcagactggt tcttccctgg ggagatagag ttcaacatta ctggcaatta tgggagtcca    1680
gtacacgtga accataatgc caactacagc tcaatgccct ccccagacat ggaccctgct    1740
gaccggcgcc agcccgagca ggcccgccgg cccctcagcg tcgccacgga taatatgatg    1800
ctggagtttt acaaaaagga tggccttagg aaaatccaaa gcatgggtgt gagggtcatg    1860
gacacaaact gggtggctcg aagaggctcc tcggccggtc ggaaagtgtc ctgcgccccg    1920
ccctccatgc agcctcccgc cccgcccgcc gagctggctg cgcccctgcc ttcgccgctg    1980
ccggagcagc ccctggacag ccccgcggcc cccgcgctct ctccatccgg cctgggcctc    2040
cagcctgggc ccgagcgcac cagcacaaca aaaagcaagg aactttctcc aggctctgca    2100
cagaaaggaa gtccaggctc cagccagggc acagcctgtg cagggactca accaggggct    2160
caacctggag ctcagccggg cgccagcccc agccccagcc agccgcctgc agaccagagt    2220
cctcacaccc tccggaaagt ttcaaagaag ctggcaccga ttccacccaa ggtccccttt    2280
ggccagccgg gggctatggc agaccagtcc gctggccagc tgtccccagt cagcctgtcc    2340
cccaccccgc ccagcacccc gtcaccctat ggactgagct accctcaggg gtactccttg    2400
gcctcgggcc agctctcccc agctgcagct cctcccctgg cctctccttc tgtctttaca    2460
agcactttga gcaaatcgcg gcccactcct aagccgcgac agagacctac tctgccgcct    2520
cctcagcctc ccacagtaaa cctctcggcc tctagtccac agtccacgga ggcccccatg    2580
```

```
ctagatggca tgtcccctgg ggaaagcatg tctacagatc ttgtccactt tgatattccc    2640
tcgatccaca tagagctcgg gtcgacgctc cgcctgagtc ccctggagca catgcggcga    2700
cactcagtaa ctgacaagag ggactcggag gaggagtctg agagcaccgc cctctgacat    2760
gacaccgccc atcctgcctc gcgtgtacat acatcacggg ccctaggaac gccgccagga    2820
gcagcgtcca tgagcttgcc aagtgttctc tgctggctct ttcctgccac tgccaacacg    2880
aggttggaat ttggcagaaa attgtgatct ccagtccgtg tggtgatgct ggtggtgcag    2940
gttttgtttg ttcctttcgg gtggtgactt cggccttttg tttgaccttt gccttttgac    3000
tttgtgcctc ttttgatcca ctttcagcct ccatgccaga aaacacccac ctctccatcc    3060
aaggctggtc aggaacgtcc tttgcagggt cggggtggtg cgggagaggc tcactttgcc    3120
tggttagacc caagggctgc tacctttcc ttggacggct catgtcaggt cttgcaggat    3180
cagtttaatg gccacagaaa ggaagcagga cagcagggcc cctctcaccc acaactggac    3240
caggtccagg attctagcag tcctggggca ctgacctttg ccagctacct gggggagggc    3300
ttgccactgg aaaacctttc aggccgcccc catcagtggg ctccaaagta aatggctgaa    3360
aacaaaaatg tttcacttcc taacagtttt ccttttcca ctgtgtgact gaaagctcct    3420
atatcatttt atatttctga atctataaaa caaaacaaac aagcctgaaa gtgtctggag    3480
gagccaaagg tggcctccct gtccccaaat atattggcta tatgagagta attttacccc    3540
tctacgtacc taaaggcacc cagttcacta gtctgtgggg tcctggagcc tgtctcttct    3600
ttctggaggt tcaaactgaa tagcaataat tacgttaccc aaagcatgtg gaggaaaagt    3660
gaaaccagcc acggagacgc tggcccacgg ctcggcctgc ggtgtggcct gctttgctca    3720
ccagcgtcag ccgctcattt ccttctcatg aagtcccatc tggtcatggg gacgagggcc    3780
gggagggcac cgggtagcct tttcacactt ggggattagg ggagtgagaa aagatttggg    3840
ccatgcatgc aaagtcaaag tttaaaattt tatccttttc aaatagatga tataatatac    3900
ctatacatga tataatattt gtatatatga aatctctcta tatttgttta atttgagcca    3960
ttcaatctaa accaatgtac aggtgtacaa tgaaaaattt aaatgcttag ttatttttcc    4020
caacacagtg taaagtcacc ctcctctgag agtgggatgt gcagagtttt gatgttgcag    4080
ctttgctcac ttcctggcaa gggcaggtca tgcctcaatt tgtaatggga gtctggggta    4140
agggtggggg ttgaaagttg ttatctttaa atacatgtac aaatcgttgt caaaagtaac    4200
gttattaaaa tagatttatt atccctg                                       4227
```

<210> 246
<211> 818
<212> PRT
<213> Homo sapiens

<400> 246

```
Met Lys Lys Gln Phe Asn Arg Met Arg Gln Leu Ala Asn Gln Thr Val
 1               5                  10                  15
Gly Arg Ala Glu Lys Thr Glu Val Leu Ser Glu Asp Leu Leu Gln Val
            20                  25                  30
Glu Lys Arg Leu Glu Leu Val Lys Gln Val Ser His Ser Thr His Lys
        35                  40                  45
Lys Leu Thr Ala Cys Leu Gln Gly Gln Gln Gly Ala Glu Ala Asp Lys
    50                  55                  60
Arg Ser Lys Lys Leu Pro Leu Thr Thr Leu Ala Gln Cys Leu Met Glu
65                  70                  75                  80
Gly Ser Ala Ile Leu Gly Asp Asp Thr Leu Leu Gly Lys Met Leu Lys
                85                  90                  95
Leu Cys Gly Glu Thr Glu Asp Lys Leu Ala Gln Glu Leu Ile His Phe
            100                 105                 110
Glu Leu Gln Val Glu Arg Asp Val Ile Glu Pro Leu Phe Leu Leu Ala
        115                 120                 125
Glu Val Glu Ile Pro Asn Ile Gln Lys Gln Arg Lys His Leu Ala Lys
    130                 135                 140
Leu Val Leu Asp Met Asp Ser Ser Arg Thr Arg Trp Gln Gln Thr Ser
145                 150                 155                 160
Lys Ser Ser Gly Leu Ser Ser Ser Leu Gln Pro Ala Gly Ala Lys Ala
                165                 170                 175
Asp Ala Leu Arg Glu Glu Met Glu Glu Ala Ala Asn Arg Val Glu Ile
            180                 185                 190
Cys Arg Asp Gln Leu Ser Ala Asp Met Tyr Ser Phe Val Ala Lys Glu
        195                 200                 205
```

```
Ile Asp Tyr Ala Asn Tyr Phe Gln Thr Leu Ile Glu Val Gln Ala Glu
    210                 215                 220
Tyr His Arg Lys Ser Leu Thr Leu Leu Gln Ala Val Leu Pro Gln Ile
225                 230                 235                 240
Lys Ala Gln Gln Glu Ala Trp Val Glu Lys Pro Ser Phe Gly Lys Pro
                245                 250                 255
Leu Glu Glu His Leu Thr Ile Ser Gly Arg Glu Ile Ala Phe Pro Ile
            260                 265                 270
Glu Ala Cys Val Thr Met Leu Leu Glu Cys Gly Met Gln Glu Glu Gly
        275                 280                 285
Leu Phe Arg Val Ala Pro Ser Ala Ser Lys Leu Lys Lys Leu Lys Ala
    290                 295                 300
Ala Leu Asp Cys Cys Val Val Asp Val Gln Glu Tyr Ser Ala Asp Pro
305                 310                 315                 320
His Ala Ile Ala Gly Ala Leu Lys Ser Tyr Leu Arg Glu Leu Pro Glu
                325                 330                 335
Pro Leu Met Thr Phe Glu Leu Tyr Asp Glu Trp Ile Gln Ala Ser Asn
            340                 345                 350
Val Gln Glu Gln Asp Lys Lys Leu Gln Ala Leu Trp Asn Ala Cys Glu
        355                 360                 365
Lys Leu Pro Lys Ala Asn His Asn Asn Ile Arg Tyr Leu Ile Lys Phe
    370                 375                 380
Leu Ser Lys Leu Ser Glu Tyr Gln Asp Val Asn Lys Met Thr Pro Ser
385                 390                 395                 400
Asn Met Ala Ile Val Leu Gly Pro Asn Leu Leu Trp Pro Gln Ala Glu
                405                 410                 415
Gly Asn Ile Thr Glu Met Met Thr Thr Val Ser Leu Gln Ile Val Gly
            420                 425                 430
Ile Ile Glu Pro Ile Ile Gln His Ala Asp Trp Phe Phe Pro Gly Glu
        435                 440                 445
Ile Glu Phe Asn Ile Thr Gly Asn Tyr Gly Ser Pro Val His Val Asn
    450                 455                 460
His Asn Ala Asn Tyr Ser Ser Met Pro Ser Pro Asp Met Asp Pro Ala
465                 470                 475                 480
Asp Arg Arg Gln Pro Glu Gln Ala Arg Arg Pro Leu Ser Val Ala Thr
                485                 490                 495
Asp Asn Met Met Leu Glu Phe Tyr Lys Lys Asp Gly Leu Arg Lys Ile
            500                 505                 510
Gln Ser Met Gly Val Arg Val Met Asp Thr Asn Trp Val Ala Arg Arg
        515                 520                 525
Gly Ser Ser Ala Gly Arg Lys Val Ser Cys Ala Pro Pro Ser Met Gln
    530                 535                 540
Pro Pro Ala Pro Pro Ala Glu Leu Ala Ala Pro Leu Pro Ser Pro Leu
545                 550                 555                 560
Pro Glu Gln Pro Leu Asp Ser Pro Ala Ala Pro Ala Leu Ser Pro Ser
                565                 570                 575
Gly Leu Gly Leu Gln Pro Gly Pro Glu Arg Thr Ser Thr Thr Lys Ser
            580                 585                 590
Lys Glu Leu Ser Pro Gly Ser Ala Gln Lys Gly Ser Pro Gly Ser Ser
        595                 600                 605
Gln Gly Thr Ala Cys Ala Gly Thr Gln Pro Gly Ala Gln Pro Gly Ala
    610                 615                 620
Gln Pro Gly Ala Ser Pro Ser Pro Ser Gln Pro Pro Ala Asp Gln Ser
625                 630                 635                 640
Pro His Thr Leu Arg Lys Val Ser Lys Lys Leu Ala Pro Ile Pro Pro
                645                 650                 655
Lys Val Pro Phe Gly Gln Pro Gly Ala Met Ala Asp Gln Ser Ala Gly
            660                 665                 670
Gln Leu Ser Pro Val Ser Leu Ser Pro Thr Pro Pro Ser Thr Pro Ser
        675                 680                 685
Pro Tyr Gly Leu Ser Tyr Pro Gln Gly Tyr Ser Leu Ala Ser Gly Gln
```

```
    690                 695                 700
Leu Ser Pro Ala Ala Ala Pro Pro Leu Ala Ser Pro Ser Val Phe Thr
705                 710                 715                 720
Ser Thr Leu Ser Lys Ser Arg Pro Thr Pro Lys Pro Arg Gln Arg Pro
                725                 730                 735
Thr Leu Pro Pro Pro Gln Pro Pro Thr Val Asn Leu Ser Ala Ser Ser
            740                 745                 750
Pro Gln Ser Thr Glu Ala Pro Met Leu Asp Gly Met Ser Pro Gly Glu
        755                 760                 765
Ser Met Ser Thr Asp Leu Val His Phe Asp Ile Pro Ser Ile His Ile
    770                 775                 780
Glu Leu Gly Ser Thr Leu Arg Leu Ser Pro Leu Glu His Met Arg Arg
785                 790                 795                 800
His Ser Val Thr Asp Lys Arg Asp Ser Glu Glu Glu Ser Glu Ser Thr
                805                 810                 815
Ala Leu
```

<210> 247
<211> 2850
<212> DNA
<213> Homo sapiens

<400> 247

```
tcccgagccc tccacccgtc gtgccggcgc cgcccggacc gccagatgct gtgtgctgtg      60
gacccacctg gggttcatgg agtgggccac ggggcccagc cctaagcact gctgcgccca     120
gggtcgccgc gcctcctgct gaggggtccc cgtgccactg gctctcacca ttgccctcgc     180
ctgccgatgg cctctgctgc ccagcctggg gccagctcta ccgcctgagc cccctgcccc     240
actccaggac tcaccgtacc ccgatggggt aacgtgacac aggccccaca cgtcagaggc     300
cgctgtcccc acggccactg cccgtgaccc ctggcccaag gcagctggag ttggttcagt     360
tcaagttcat tcttcctctg gcccttgggg gcttggggcc cacctctgag tgaagggggc     420
tgtctgccca tccaccaatg tggagagggc gcccccggtg tggggtccag ctctggacac     480
tgcttggcgg ccgggttcac tttgagtttt taagttttct ttgctgagct tttttggttg     540
ttctttttat tttttgcctc tttatgacta tccagctctg agagacggga gtttggagtt     600
gcccgcttta ctttggttgg gttgggggggg gcggcgggct gttttgttcc ttttcttttt     660
taagagttgg gttttctttt ttaattatcc aaacagtggg cagcttcctc ccccacaccc     720
aagtatttgc acaatatttg tgcggggtat gggggtgggt ttttaaatct cgtttctctt     780
ggacaagcac agggatctcg ttctcctcat tttttggggg tgtgtgggga cttctcaggt     840
cgtgtcccca gccttctctg cagtcccttc tgccctgccg ggcccgtcgg gaggcgccat     900
ggctcggatg aaccgcccgg ccccggtgga ggtgagctac aaacacatgc gcttcctcat     960
cacccacaac cccaccaacg ccacgctcag caccttcatt gaggacctga agaagtacgg    1020
ggctaccact gtggtgcgtg tgtgtgaagt gacctatgac aaaacgccgc tggagaagga    1080
tggcatcacc gttgtggact ggccgtttga cgatggggcg cccccgcccg gcaaggtagt    1140
ggaagactgg ctgagcctgg tgaaggccaa gttctgtgag gcccccggca gctgcgtggc    1200
tgtgcactgc gtggcgggcc tgggccgggc tccagtcctt gtggcgctgg cccttattga    1260
gagcgggatg aagtacgagg acgccatcca gttcatccgc cagaagcgcc gcggagccat    1320
caacagcaag cagctcacct acctggagaa ataccggccc aaacagaggc tgcggttcaa    1380
agacccacac acgcacaaga cccggtgctg cgttatgtag ctcaggacct tggctgggcc    1440
tggtcgtcat gtaggtcagg accttggctg gacctggagg ccctgcccag ccctgctctg    1500
cccagcccag caggggctcc aggccttggc tggccccaca tcgccttttc ctccccgaca    1560
cctccgtgca cttgtgtccg aggagcgagg agcccctcgg gccctgggtg gcctctgggc    1620
cctttctcct gtctccgcca ctccctctgg cggcgctggc cgtggctctg tctctctgag    1680
gtgggtcggg cgccctctgc ccgccccctc ccacaccagc caggctggtc tcctctagcc    1740
tgtttgttgt ggggtggggg tatattttgt aaccactggg cccccagccc ctcttttgcg    1800
acccccttgtc ctgacctgtt ctcggcacct taaattatta gaccccgggg cagtcaggtg    1860
ctccggacac ccgaaggcaa taaaacagga gccgtggccg tgtgtgtgga gtgggctgca    1920
gcgtcaggcg gggcgggctg gtggcctggg ggccccagag gctgctgtct ggatcctggg    1980
ctgctgccca ggatggggct cccgcgtgct cttgcgctgc cctctggtgg ccgctctggg    2040
tccttgcacc ccgacccagg ggccagcctg ccctgtcctg tcctgatacc gaggtgggag    2100
ccctgccttg gccagggtgg ccgtgttgac ggttcttggg actgtgacat tggaaggcga    2160
ggcaggtcac cagcactgtc ctctgcagga tgggctggga ttcatttggc agcttctcag    2220
```

```
ggcctgtgtc cggctggttg gtccctgtgc tgcccaaacc aggtgtccac atttccggct    2280
ccgaggcgca gagaaggggg caggtggtgg cttgggtgga ggaagtcacc atccatcagc    2340
ccagggaggg agggtaccac ctgggcacct ggggctggat gtgagaggcc tggaccaggg    2400
cccgccggag ggcgtggacc agatgctcat gtgttcctgg gtgcagtgtc tgtgttgggg    2460
gctggcccca ccctgggcca gggtgcatgg agggcatggc cccagcgggg aggaaggtgg    2520
gcctagggct ggctccaggg tgtggagagc ctgggagtgg tctccgtcct ggggccccag    2580
gaggttcccg caaggagcga ctggggcagg tgctggagga ggtcagtgga caagatgggg    2640
agatgtggaa accccaaaag ccccttttca ggcagccctg cctccaagac cgacagatgg    2700
ctaagggggc cgcagacctg gctcccccag ctcctgtgtg gagaaagggc aacagctgtc    2760
ccggatggtt attctctcct ttcctcaaac acatttggaa ctcaagtaaa tccgatgcat    2820
gttgggtgaa aaaaaaaaaa aaaaaaaaaa                                     2850
```

<210> 248
<211> 173
<212> PRT
<213> Homo sapiens

<400> 248

```
Met Ala Arg Met Asn Arg Pro Ala Pro Val Glu Val Ser Tyr Lys His
 1               5                  10                  15
Met Arg Phe Leu Ile Thr His Asn Pro Thr Asn Ala Thr Leu Ser Thr
            20                  25                  30
Phe Ile Glu Asp Leu Lys Lys Tyr Gly Ala Thr Thr Val Val Arg Val
        35                  40                  45
Cys Glu Val Thr Tyr Asp Lys Thr Pro Leu Glu Lys Asp Gly Ile Thr
    50                  55                  60
Val Val Asp Trp Pro Phe Asp Asp Gly Ala Pro Pro Pro Gly Lys Val
65                  70                  75                  80
Val Glu Asp Trp Leu Ser Leu Val Lys Ala Lys Phe Cys Glu Ala Pro
                85                  90                  95
Gly Ser Cys Val Ala Val His Cys Val Ala Gly Leu Gly Arg Ala Pro
            100                 105                 110
Val Leu Val Ala Leu Ala Leu Ile Glu Ser Gly Met Lys Tyr Glu Asp
        115                 120                 125
Ala Ile Gln Phe Ile Arg Gln Lys Arg Arg Gly Ala Ile Asn Ser Lys
    130                 135                 140
Gln Leu Thr Tyr Leu Glu Lys Tyr Arg Pro Lys Gln Arg Leu Arg Phe
145                 150                 155                 160
Lys Asp Pro His Thr His Lys Thr Arg Cys Cys Val Met
                165                 170
```

<210> 249
<211> 3853
<212> DNA
<213> Homo sapiens

<400> 249

```
gaagctggct ttatttgtcc atgtctcgga cagagcctgg gaagctgcca gtgagatttc      60
agagaccaag agcgcgaagg ggcgggcgat gtggcaatcc gtctgggatg tgaaaagcgt     120
ggagcgcatt tagaggcatt cgacgaaaac acaggaaatc actcctctcc cgctcctggg     180
cgccgctgcc actggggcag aggactggga accgcggcag cgggataagt ggcccagcca     240
gagagcgcag ctcccgcgcc cggtcctgcc ctgcgaacca gcgcggcccc ctggcgctga     300
ggctgctccg gccatggccc ctcggccccg cgcccgccca ggggtcgctg tcgcctgctg     360
ctggctcctc actgttgttc tacgctgctg cgtatcattc aatgttgatg tgaaaaactc     420
aatgactttc agcggcccgg tggaagacat gtttggatat actgttcaac aatatgaaaa     480
tgaagaagga aaatgggtgc ttattggttc tccgttagtt ggccaaccca aaaacagaac     540
tggagatgtc tataagtgtc cagttgggag aggtgaatca ttaccttgcg taaagttgga     600
tctaccagtt aatacatcaa ttcccaatgt cacagaagta aaggagaaca tgacatttgg     660
atcaacttta gtcaccaacc caaatggagg atttctggct tgtgggccct tatatgccta     720
tagatgtgga catttgcatt acacaactgg aatctgttct gacgtcagcc ccacatttca     780
agtcgtgaat tccattgccc ctgtacaaga atgcagcact caactggaca tagtcatagt     840
```

gctggatggt tccaacagta tttacccatg ggacagtgtt acagcttttt taaatgacct 900
cttgaaaaga atggatattg gtcctaaaca gacacaggtt ggaattgtac agtatggaga 960
aaacgtgacc catgagttca acctcaataa gtattcttcc accgaagagg tacttgttgc 1020
agcaaagaaa atagtccaga gaggtggccg ccagactatg acagctcttg gaacagacac 1080
agcaagaaag gaggcattca cggaagcccg gggtgcccga agaggagtta aaaaagtcat 1140
ggttattgtg acagatggag agtctcatga caatcatcga ctgaagaagg tcatccaaga 1200
ctgtgaagat gaaaacattc aacggttttc catagctatt cttggcagct ataaccgagg 1260
aaatttaagc actgaaaaat ttgtggagga aataaaatca attgcaagtg aacccactga 1320
aaagcatttc ttcaatgtct ctgatgaatt ggctctagtc accattgtta aaactctggg 1380
agaaagaata tttgccctgg aagccacagc tgaccagtca gcagcttcat ttgaaatgga 1440
aatgtctcag actggcttca gtgctcatta ttcacaggac tgggtcatgc ttggagcagt 1500
aggagcctat gattggaatg gaacagttgt catgcagaag gctagtcaaa tcataatccc 1560
tcgaaacaca acctttaatg ttgagtctac caaaaagaat gaaccgcttg cttcttattt 1620
aggttacact gtaaactctg ctactgcttc ttctggagat gtgctctata ttgctggaca 1680
gcctcggtac aatcatacag gccaggtcat tatctacagg atggaagatg gaaacatcaa 1740
aattctccag acgctcagtg gagaacagat tggttcctac tttggcagta ttttaacaac 1800
aactgacatt gacaaggatt ctaatactga cattcttcta gtcggagccc ctatgtacat 1860
gggaacagag aaggaggagc aaggaaaagt gtatgtgtat gctctcaatc agacaaggtt 1920
tgaatatcaa atgagcctgg aacctattaa gcagacgtgc tgttcatctc ggcagcacaa 1980
ttcatgcaca acagaaaaca aaaatgagcc atgcggggct cgttttggaa ctgcaattgc 2040
tgctgtaaaa gacctcaatc ttgatggatt taatgacatc gtgataggag ctccgctgga 2100
agatgatcac gggggagctg tgtacattta tcatggaagt ggcaagacta taaggaaaga 2160
gtatgcacaa cgtattccat caggtgggga tggtaagaca ctgaaatttt ttggccagtc 2220
tatccacgga gaaatggatt taaatggtga cggtctgaca gatgtgacta ttgggggcct 2280
tggtggtgct gccctcttct ggtcccgaga tgtggccgta gttaaagtga ccatgaattt 2340
tgagccaaat aaagtgaata ttcaaaagaa aaactgccat atggagggaa aggaaacagt 2400
atgcataaat gctacagtgt gttttgaggt taaattaaag tctaaagaag acacgattta 2460
tgaagctgat ttgcagtacc gtgtcaccct agattcacta agacaaatat cacgaagttt 2520
tttctctgga actcaagaga gaaaggttca aaggaacatc acagttcgaa aatcagaatg 2580
cactaagcac tccttctaca tgttggacaa gcatgacttt caggactctg tgagaataac 2640
gttggacttt aatcttaccg atccagaaaa tgggcctgtt cttgatgatt ctctaccaaa 2700
ctcagtacat gaatatattc cctttgccaa agattgtgga aataaggaaa aatgtatctc 2760
agacctcagc ctgcatgtcg ccaccactga aaaggacctg ctgattgtcc gatcccagaa 2820
tgataagttc aacgttagcc tcacagtcaa aaatacaaag gacagtgcct ataacaccag 2880
gacaatagtg cattattctc caaatctagt tttttcagga attgaggcta tccaaaaaga 2940
cagttgtgaa tctaatcata atatcacatg taaagttgga tatcccttcc tgagaagagg 3000
agagatggta actttcaaaa tattgtttca gtttaacaca tcctatctca tggaaaatgt 3060
gaccatttat ttaagtgcaa caagtgacag cgaagaacct cctgaaaccc tttctgataa 3120
tgtagtaaac atttctatcc cggtaaaata tgaagttgga ctacagtttt acagctctgc 3180
aagtgaatac cacatttcaa ttgctgccaa tgagacagtc cctgaagtta ttaattctac 3240
tgaggacatt ggaaatgaaa ttaatatctt ctacttgatt agaaaaagtg gatcttttcc 3300
aatgccagag cttaagctgt caatttcatt ccccaatatg acatcaaatg gttaccctgt 3360
gctgtaccca actggattgt catcttctga gaatgcaaac tgcagacccc atatctttga 3420
ggatcctttc agtatcaact ctggaaagaa aatgactaca tcaactgacc atctcaaacg 3480
aggcacaatt ctggactgca atacatgtaa atttgctacc atcacatgta atctcacttc 3540
ttctgacatc agccaagtca atgtttcgct tatcttgtgg aaaccaactt ttataaaatc 3600
atatttttcc agcttaaatc ttactataag gggagaactt cggagtgaaa atgcatctct 3660
ggttttaagt agcagcaatc aaaaaagaga gcttgctatt caaatatcca aagatgggct 3720
accgggcaga gtgccattat gggtcatcct gctgagtgct tttgccggat tgttgctgtt 3780
aatgctgctc attttagcac tgtggaagat tggattcttc aaaagaccac tgaaaaagaa 3840
aatggagaaa tga 3853

<210> 250
<211> 1179
<212> PRT
<213> Homo sapiens

<400> 250
Met Ala Pro Arg Pro Arg Ala Arg Pro Gly Val Ala Val Ala Cys Cys
1 5 10 15
Trp Leu Leu Thr Val Val Leu Arg Cys Cys Val Ser Phe Asn Val Asp

```
                20                  25                  30
Val Lys Asn Ser Met Thr Phe Ser Gly Pro Val Glu Asp Met Phe Gly
        35                  40                  45
Tyr Thr Val Gln Gln Tyr Glu Asn Glu Glu Gly Lys Trp Val Leu Ile
    50                  55                  60
Gly Ser Pro Leu Val Gly Gln Pro Lys Asn Arg Thr Gly Asp Val Tyr
65                  70                  75                  80
Lys Cys Pro Val Gly Arg Gly Glu Ser Leu Pro Cys Val Lys Leu Asp
                85                  90                  95
Leu Pro Val Asn Thr Ser Ile Pro Asn Val Thr Glu Val Lys Glu Asn
            100                 105                 110
Met Thr Phe Gly Ser Thr Leu Val Thr Asn Pro Asn Gly Gly Phe Leu
        115                 120                 125
Ala Cys Gly Pro Leu Tyr Ala Tyr Arg Cys Gly His Leu His Tyr Thr
    130                 135                 140
Thr Gly Ile Cys Ser Asp Val Ser Pro Thr Phe Gln Val Val Asn Ser
145                 150                 155                 160
Ile Ala Pro Val Gln Glu Cys Ser Thr Gln Leu Asp Ile Val Ile Val
                165                 170                 175
Leu Asp Gly Ser Asn Ser Ile Tyr Pro Trp Asp Ser Val Thr Ala Phe
            180                 185                 190
Leu Asn Asp Leu Leu Lys Arg Met Asp Ile Gly Pro Lys Gln Thr Gln
        195                 200                 205
Val Gly Ile Val Gln Tyr Gly Glu Asn Val Thr His Glu Phe Asn Leu
    210                 215                 220
Asn Lys Tyr Ser Ser Thr Glu Glu Val Leu Val Ala Ala Lys Lys Ile
225                 230                 235                 240
Val Gln Arg Gly Gly Arg Gln Thr Met Thr Ala Leu Gly Thr Asp Thr
                245                 250                 255
Ala Arg Lys Glu Ala Phe Thr Glu Ala Arg Gly Ala Arg Arg Gly Val
            260                 265                 270
Lys Lys Val Met Val Ile Val Thr Asp Gly Glu Ser His Asp Asn His
        275                 280                 285
Arg Leu Lys Lys Val Ile Gln Asp Cys Glu Asp Glu Asn Ile Gln Arg
    290                 295                 300
Phe Ser Ile Ala Ile Leu Gly Ser Tyr Asn Arg Gly Asn Leu Ser Thr
305                 310                 315                 320
Glu Lys Phe Val Glu Glu Ile Lys Ser Ile Ala Ser Glu Pro Thr Glu
                325                 330                 335
Lys His Phe Phe Asn Val Ser Asp Glu Leu Ala Leu Val Thr Ile Val
            340                 345                 350
Lys Thr Leu Gly Glu Arg Ile Phe Ala Leu Glu Ala Thr Ala Asp Gln
        355                 360                 365
Ser Ala Ala Ser Phe Glu Met Glu Met Ser Gln Thr Gly Phe Ser Ala
    370                 375                 380
His Tyr Ser Gln Asp Trp Val Met Leu Gly Ala Val Gly Ala Tyr Asp
385                 390                 395                 400
Trp Asn Gly Thr Val Val Met Gln Lys Ala Ser Gln Ile Ile Ile Pro
                405                 410                 415
Arg Asn Thr Thr Phe Asn Val Glu Ser Thr Lys Lys Asn Glu Pro Leu
            420                 425                 430
Ala Ser Tyr Leu Gly Tyr Thr Val Asn Ser Ala Thr Ala Ser Ser Gly
        435                 440                 445
Asp Val Leu Tyr Ile Ala Gly Gln Pro Arg Tyr Asn His Thr Gly Gln
    450                 455                 460
Val Ile Ile Tyr Arg Met Glu Asp Gly Asn Ile Lys Ile Leu Gln Thr
465                 470                 475                 480
Leu Ser Gly Glu Gln Ile Gly Ser Tyr Phe Gly Ser Ile Leu Thr Thr
                485                 490                 495
Thr Asp Ile Asp Lys Asp Ser Asn Thr Asp Ile Leu Leu Val Gly Ala
            500                 505                 510
```

Pro Met Tyr Met Gly Thr Glu Lys Glu Glu Gln Gly Lys Val Tyr Val
515 520 525
Tyr Ala Leu Asn Gln Thr Arg Phe Glu Tyr Gln Met Ser Leu Glu Pro
530 535 540
Ile Lys Gln Thr Cys Cys Ser Ser Arg Gln His Asn Ser Cys Thr Thr
545 550 555 560
Glu Asn Lys Asn Glu Pro Cys Gly Ala Arg Phe Gly Thr Ala Ile Ala
565 570 575
Ala Val Lys Asp Leu Asn Leu Asp Gly Phe Asn Asp Ile Val Ile Gly
580 585 590
Ala Pro Leu Glu Asp Asp His Gly Gly Ala Val Tyr Ile Tyr His Gly
595 600 605
Ser Gly Lys Thr Ile Arg Lys Glu Tyr Ala Gln Arg Ile Pro Ser Gly
610 615 620
Gly Asp Gly Lys Thr Leu Lys Phe Phe Gly Gln Ser Ile His Gly Glu
625 630 635 640
Met Asp Leu Asn Gly Asp Gly Leu Thr Asp Val Thr Ile Gly Gly Leu
645 650 655
Gly Gly Ala Ala Leu Phe Trp Ser Arg Asp Val Ala Val Val Lys Val
660 665 670
Thr Met Asn Phe Glu Pro Asn Lys Val Asn Ile Gln Lys Lys Asn Cys
675 680 685
His Met Glu Gly Lys Glu Thr Val Cys Ile Asn Ala Thr Val Cys Phe
690 695 700
Glu Val Lys Leu Lys Ser Lys Glu Asp Thr Ile Tyr Glu Ala Asp Leu
705 710 715 720
Gln Tyr Arg Val Thr Leu Asp Ser Leu Arg Gln Ile Ser Arg Ser Phe
725 730 735
Phe Ser Gly Thr Gln Glu Arg Lys Val Gln Arg Asn Ile Thr Val Arg
740 745 750
Lys Ser Glu Cys Thr Lys His Ser Phe Tyr Met Leu Asp Lys His Asp
755 760 765
Phe Gln Asp Ser Val Arg Ile Thr Leu Asp Phe Asn Leu Thr Asp Pro
770 775 780
Glu Asn Gly Pro Val Leu Asp Asp Ser Leu Pro Asn Ser Val His Glu
785 790 795 800
Tyr Ile Pro Phe Ala Lys Asp Cys Gly Asn Lys Glu Lys Cys Ile Ser
805 810 815
Asp Leu Ser Leu His Val Ala Thr Thr Glu Lys Asp Leu Leu Ile Val
820 825 830
Arg Ser Gln Asn Asp Lys Phe Asn Val Ser Leu Thr Val Lys Asn Thr
835 840 845
Lys Asp Ser Ala Tyr Asn Thr Arg Thr Ile Val His Tyr Ser Pro Asn
850 855 860
Leu Val Phe Ser Gly Ile Glu Ala Ile Gln Lys Asp Ser Cys Glu Ser
865 870 875 880
Asn His Asn Ile Thr Cys Lys Val Gly Tyr Pro Phe Leu Arg Arg Gly
885 890 895
Glu Met Val Thr Phe Lys Ile Leu Phe Gln Phe Asn Thr Ser Tyr Leu
900 905 910
Met Glu Asn Val Thr Ile Tyr Leu Ser Ala Thr Ser Asp Ser Glu Glu
915 920 925
Pro Pro Glu Thr Leu Ser Asp Asn Val Val Asn Ile Ser Ile Pro Val
930 935 940
Lys Tyr Glu Val Gly Leu Gln Phe Tyr Ser Ser Ala Ser Glu Tyr His
945 950 955 960
Ile Ser Ile Ala Ala Asn Glu Thr Val Pro Glu Val Ile Asn Ser Thr
965 970 975
Glu Asp Ile Gly Asn Glu Ile Asn Ile Phe Tyr Leu Ile Arg Lys Ser
980 985 990
Gly Ser Phe Pro Met Pro Glu Leu Lys Leu Ser Ile Ser Phe Pro Asn

```
        995                 1000                1005
Met Thr Ser Asn Gly Tyr Pro Val Leu Tyr Pro Thr Gly Leu Ser Ser
    1010                1015                1020
Ser Glu Asn Ala Asn Cys Arg Pro His Ile Phe Glu Asp Pro Phe Ser
1025                1030                1035                1040
Ile Asn Ser Gly Lys Lys Met Thr Thr Ser Thr Asp His Leu Lys Arg
                1045                1050                1055
Gly Thr Ile Leu Asp Cys Asn Thr Cys Lys Phe Ala Thr Ile Thr Cys
            1060                1065                1070
Asn Leu Thr Ser Ser Asp Ile Ser Gln Val Asn Val Ser Leu Ile Leu
        1075                1080                1085
Trp Lys Pro Thr Phe Ile Lys Ser Tyr Phe Ser Ser Leu Asn Leu Thr
    1090                1095                1100
Ile Arg Gly Glu Leu Arg Ser Glu Asn Ala Ser Leu Val Leu Ser Ser
1105                1110                1115                1120
Ser Asn Gln Lys Arg Glu Leu Ala Ile Gln Ile Ser Lys Asp Gly Leu
                1125                1130                1135
Pro Gly Arg Val Pro Leu Trp Val Ile Leu Leu Ser Ala Phe Ala Gly
            1140                1145                1150
Leu Leu Leu Leu Met Leu Leu Ile Leu Ala Leu Trp Lys Ile Gly Phe
        1155                1160                1165
Phe Lys Arg Pro Leu Lys Lys Lys Met Glu Lys
    1170                1175
```

<210> 251
<211> 5010
<212> DNA
<213> Homo sapiens

<400> 251

```
atggggcccc ggctcagcgt ctggctgctg ctgctgcccg ccgcccttct gctccacgag      60
gagcacagcc gggccgctgc gaagggtggc tgtgctggct ctggctgtgg caaatgtgac     120
tgccatggag tgaagggaca aaagggtgaa agaggcctcc cggggttaca aggtgtcatt     180
gggtttcctg gaatgcaagg acctgagggg ccacagggac caccaggaca aaagggtgat     240
actggagaac caggactacc tggaacaaaa gggacaagag gacctccggg agcatctggc     300
taccctggaa acccaggact tcccggaatt cctggccaag acggcccgcc aggccccca      360
ggtattccag gatgcaatgg cacaaagggg gagagagggc cgctcgggcc tcctggcttg     420
cctggtttcg caggaaatcc cggaccacca ggcttaccag ggatgaaggg tgatccaggt     480
gagatacttg gccatgtgcc cgggatgctg ttgaaaggtg aaagaggatt tcccggaatc     540
ccagggactc caggcccacc aggactgcca gggcttcaag gtcctgttgg gcctccagga     600
tttaccggac caccaggtcc cccaggccct cccggccctc caggtgaaaa gggacaaatg     660
ggcttaagtt ttcaaggacc aaaaggtgac aagggtgacc aaggggtcag tgggcctcca     720
ggagtaccag gacaagctca agttcaagaa aaaggagact tcgccaccaa gggagaaaag     780
ggccaaaaag gtgaacctgg atttcagggg atgccagggg tcggagagaa aggtgaaccc     840
ggaaaaccag gacccagagg caaacccgga aaagatggtg acaaagggga aaaagggagt     900
cccggttttc ctggtgaacc cgggtaccca ggactcatag gccgccaggg cccgcaggga     960
gaaaagggtg aagcaggtcc tcctggccca cctggaattg ttataggcac aggacctttg    1020
ggagaaaaag gagagagggg ctaccctgga actccggggc caagaggaga gccaggccca    1080
aaaggtttcc caggactacc aggccaaccc ggacctccag gcctccctgt acctgggcag    1140
gctggtgccc ctggcttccc tggtgaaaga ggagaaaaag gtgaccgagg atttcctggt    1200
acatctctgc caggaccaag tggaagagat gggctcccgg gtcctcctgg ttcccccggg    1260
ccccctgggc agcctggcta cacaaatgga attgtggaat gtcagcccgg acctccaggt    1320
gaccagggtc ctcctggaat tccagggcag ccaggattta taggcgaaat tggagagaaa    1380
ggtcaaaaag gagagagttg cctcatctgt gatatagacg gatatcgggg gcctcccggg    1440
ccacagggac ccccgggaga aataggtttc ccagggcagc caggggccaa gggcgacaga    1500
ggtttgcctg gcagagatgg tgttgcagga gtgccaggcc ctcaaggtac accagggctg    1560
ataggccagc caggagccaa gggggagcct ggtgagtttt atttcgactt gcggctcaaa    1620
ggtgacaaag gagacccagg ctttccagga cagcccggca tgccagggag agcgggttct    1680
cctggaagag atggccatcc gggtcttcct ggccccaagg gctcgccggg ttctgtagga    1740
ttgaaaggag agcgtggccc ccctggagga gttggattcc caggcagtcg tggtgacacc    1800
ggcccccctg ggcctccagg atatggtcct gctggtccca ttggtgacaa aggacaagca    1860
```

ggctttcctg gaggccctgg atccccaggc ctgccaggtc caaagggtga accaggaaaa 1920
attgttcctt taccaggccc ccctggagca gaaggactgc cggggtcccc aggcttccca 1980
ggtccccaag gagaccgagg ctttcccgga accccaggaa ggccaggcct gccaggagag 2040
aagggcgctg tgggccagcc aggcattgga tttccagggc cccccggccc caaaggtgtt 2100
gacggcttac ctggagacat ggggccaccg gggactccag gtcgcccggg atttaatggc 2160
ttacctggga acccaggtgt gcagggccag aagggagagc ctggagttgg tctaccggga 2220
ctcaaaggtt tgccaggtct tcccggcatt cctggcacac ccggggagaa ggggagcatt 2280
ggggtaccag gcgttcctgg agaacatgga gcgatcggac cccctgggct tcaggggatc 2340
agaggtgaac cgggacctcc tggattgcca ggctccgtgg ggtctccagg agttccagga 2400
ataggccccc ctggagctag gggtcccctt ggaggacagg gaccaccggg gttgtcaggc 2460
cctcctggaa taaaaggaga gaagggtttc cccggattcc ctggactgga catgccgggc 2520
cctaaaggag ataaaggggc tcaaggactc cctggcataa cgggacagtc ggggctccct 2580
ggccttcctg gacagcaggg ggctcctggg attcctgggt ttccaggttc caagggagaa 2640
atgggcgtca tggggacccc cgggcagccg ggctcaccag gaccagtggg tgctcctgga 2700
ttaccgggtg aaaaagggga ccatggcttt ccgggctcct caggacccag gggagaccct 2760
ggcttgaaag gtgataaggg ggatgtcggt ctccctggca agcctggctc catggataag 2820
gtggacatgg gcagcatgaa gggccagaaa ggagaccaag gagagaaagg acaaattgga 2880
ccaattggtg agaagggatc ccgaggagac cctgggaccc caggagtgcc tggaaaggac 2940
gggcaggcag gacagcctgg gcagccagga cctaaaggtg atccaggtat aagtggaacc 3000
ccaggtgctc caggacttcc gggaccaaaa ggatctgttg gtggaatggg cttgccagga 3060
acacctggag agaaaggtgt gcctggcatc cctggcccac aaggttcacc tggcttacct 3120
ggagacaaag gtgcaaaagg agagaaaggg caggcaggcc cacctggcat aggcatccca 3180
ggactgcgtg gtgaaaaggg agatcaaggg atagcgggtt tcccaggaag ccctggagag 3240
aagggagaaa aaggaagcat tgggatccca ggaatgccag ggtccccagg ccttaaaggg 3300
tctcccggga gtgttggcta tccaggaagt cctgggctac ctggagaaaa aggtgacaaa 3360
ggcctcccag gattggatgg catccctggt gtcaaaggag aagcaggtct tcctgggact 3420
cctggcccca caggcccagc tggccagaaa ggggagccag gcagtgatgg aatcccgggg 3480
tcagcaggag agaagggtga accaggtcta ccaggaagag gattcccagg gtttccaggg 3540
gccaaaggag acaaaggttc aaagggtgag gtgggtttcc caggattagc cgggagccca 3600
ggaattcctg gatccaaagg agagcaagga ttcatgggtc ctccggggcc ccagggacag 3660
ccggggttac cgggatcccc aggccatgcc acggaggggc ccaaaggaga ccgcggacct 3720
cagggccagc ctggcctgcc aggacttccg ggacccatgg ggcctccagg gcttcctggg 3780
attgatggag ttaaaggtga caaaggaaat ccaggctggc caggagcacc cggtgtccca 3840
gggcccaagg gagaccctgg attccagggc atgcctggta ttggtggctc tccaggaatc 3900
acaggctcta agggtgatat ggggcctcca ggagttccag gatttcaagg tccaaaaggt 3960
cttcctggcc tccagggaat taaaggtgat caaggcgatc aaggcgtccc gggagctaaa 4020
ggtctcccgg gtcctcctgg ccccccaggt ccttacgaca tcatcaaagg ggagcccggg 4080
ctccctggtc ctgagggccc cccagggctg aaagggcttc agggactgcc aggcccgaaa 4140
ggccagcaag gtgttacagg attggtgggt atacctggac ctccaggtat tcctgggttt 4200
gacggtgccc ctggccagaa aggagagatg ggacctgccg ggcctactgg tccaagagga 4260
tttccaggtc caccaggccc cgatgggttg ccaggatcca tggggccccc aggcacccca 4320
tctgttgatc acggcttcct tgtgaccagg catagtcaaa caatagatga cccacagtgt 4380
ccttctggga ccaaaattct ttaccacggg tactctttgc tctacgtgca aggcaatgaa 4440
cgggcccatg gacaggactt gggcacggcc ggcagctgcc tgcgcaagtt cagcacaatg 4500
cccttcctgt tctgcaatat taacaacgtg tgcaactttg catcacgaaa tgactactcg 4560
tactggctgt ccacccctga gcccatgccc atgtcaatgg cacccatcac gggggaaaac 4620
ataagaccat ttattagtag gtgtgctgtg tgtgaggcgc ctgccatggt gatggccgtg 4680
cacagccaga ccattcagat cccaccgtgc cccagcgggt ggtcctcgct gtggatcggc 4740
tactcttttg tgatgcacac cagcgctggt gcagaaggct ctggccaagc cctggcgtcc 4800
cccggctcct gcctggagga gtttagaagt gcgccattca tcgagtgtca cggccgtggg 4860
acctgcaatt actacgcaaa cgcttacagc ttttggctcg ccaccataga gaggagcgag 4920
atgttcaaga agcctacgcc gtccaccttg aaggcagggg agctgcgcac gcacgtcagc 4980
cgctgccaag tctgtatgag aagaacataa 5010

<210> 252
<211> 1669
<212> PRT
<213> Homo sapiens

<400> 252

```
Met Gly Pro Arg Leu Ser Val Trp Leu Leu Leu Leu Pro Ala Ala Leu
 1               5                  10                  15
Leu Leu His Glu Glu His Ser Arg Ala Ala Ala Lys Gly Gly Cys Ala
            20                  25                  30
Gly Ser Gly Cys Gly Lys Cys Asp Cys His Gly Val Lys Gly Gln Lys
        35                  40                  45
Gly Glu Arg Gly Leu Pro Gly Leu Gln Gly Val Ile Gly Phe Pro Gly
    50                  55                  60
Met Gln Gly Pro Glu Gly Pro Gln Gly Pro Pro Gly Gln Lys Gly Asp
65                  70                  75                  80
Thr Gly Glu Pro Gly Leu Pro Gly Thr Lys Gly Thr Arg Gly Pro Pro
                85                  90                  95
Gly Ala Ser Gly Tyr Pro Gly Asn Pro Gly Leu Pro Gly Ile Pro Gly
            100                 105                 110
Gln Asp Gly Pro Pro Gly Pro Pro Gly Ile Pro Gly Cys Asn Gly Thr
        115                 120                 125
Lys Gly Glu Arg Gly Pro Leu Gly Pro Pro Gly Leu Pro Gly Phe Ala
    130                 135                 140
Gly Asn Pro Gly Pro Pro Gly Leu Pro Gly Met Lys Gly Asp Pro Gly
145                 150                 155                 160
Glu Ile Leu Gly His Val Pro Gly Met Leu Leu Lys Gly Glu Arg Gly
                165                 170                 175
Phe Pro Gly Ile Pro Gly Thr Pro Gly Pro Pro Gly Leu Pro Gly Leu
            180                 185                 190
Gln Gly Pro Val Gly Pro Pro Gly Phe Thr Gly Pro Pro Gly Pro Pro
        195                 200                 205
Gly Pro Pro Gly Pro Pro Gly Glu Lys Gly Gln Met Gly Leu Ser Phe
    210                 215                 220
Gln Gly Pro Lys Gly Asp Lys Gly Asp Gln Gly Val Ser Gly Pro Pro
225                 230                 235                 240
Gly Val Pro Gly Gln Ala Gln Val Gln Glu Lys Gly Asp Phe Ala Thr
                245                 250                 255
Lys Gly Glu Lys Gly Gln Lys Gly Glu Pro Gly Phe Gln Gly Met Pro
            260                 265                 270
Gly Val Gly Glu Lys Gly Glu Pro Gly Lys Pro Gly Pro Arg Gly Lys
        275                 280                 285
Pro Gly Lys Asp Gly Asp Lys Gly Glu Lys Gly Ser Pro Gly Phe Pro
    290                 295                 300
Gly Glu Pro Gly Tyr Pro Gly Leu Ile Gly Arg Gln Gly Pro Gln Gly
305                 310                 315                 320
Glu Lys Gly Glu Ala Gly Pro Pro Gly Pro Pro Gly Ile Val Ile Gly
                325                 330                 335
Thr Gly Pro Leu Gly Glu Lys Gly Glu Arg Gly Tyr Pro Gly Thr Pro
            340                 345                 350
Gly Pro Arg Gly Glu Pro Gly Pro Lys Gly Phe Pro Gly Leu Pro Gly
        355                 360                 365
Gln Pro Gly Pro Pro Gly Leu Pro Val Pro Gly Gln Ala Gly Ala Pro
    370                 375                 380
Gly Phe Pro Gly Glu Arg Gly Glu Lys Gly Asp Arg Gly Phe Pro Gly
385                 390                 395                 400
Thr Ser Leu Pro Gly Pro Ser Gly Arg Asp Gly Leu Pro Gly Pro Pro
                405                 410                 415
Gly Ser Pro Gly Pro Pro Gly Gln Pro Gly Tyr Thr Asn Gly Ile Val
            420                 425                 430
Glu Cys Gln Pro Gly Pro Pro Gly Asp Gln Gly Pro Pro Gly Ile Pro
        435                 440                 445
Gly Gln Pro Gly Phe Ile Gly Glu Ile Gly Glu Lys Gly Gln Lys Gly
    450                 455                 460
Glu Ser Cys Leu Ile Cys Asp Ile Asp Gly Tyr Arg Gly Pro Pro Gly
465                 470                 475                 480
```

Pro Gln Gly Pro Pro Gly Glu Ile Gly Phe Pro Gly Gln Pro Gly Ala
485 490 495
Lys Gly Asp Arg Gly Leu Pro Gly Arg Asp Gly Val Ala Gly Val Pro
500 505 510
Gly Pro Gln Gly Thr Pro Gly Leu Ile Gly Gln Pro Gly Ala Lys Gly
515 520 525
Glu Pro Gly Glu Phe Tyr Phe Asp Leu Arg Leu Lys Gly Asp Lys Gly
530 535 540
Asp Pro Gly Phe Pro Gly Gln Pro Gly Met Pro Gly Arg Ala Gly Ser
545 550 555 560
Pro Gly Arg Asp Gly His Pro Gly Leu Pro Gly Pro Lys Gly Ser Pro
565 570 575
Gly Ser Val Gly Leu Lys Gly Glu Arg Gly Pro Pro Gly Gly Val Gly
580 585 590
Phe Pro Gly Ser Arg Gly Asp Thr Gly Pro Pro Gly Pro Pro Gly Tyr
595 600 605
Gly Pro Ala Gly Pro Ile Gly Asp Lys Gly Gln Ala Gly Phe Pro Gly
610 615 620
Gly Pro Gly Ser Pro Gly Leu Pro Gly Pro Lys Gly Glu Pro Gly Lys
625 630 635 640
Ile Val Pro Leu Pro Gly Pro Pro Gly Ala Glu Gly Leu Pro Gly Ser
645 650 655
Pro Gly Phe Pro Gly Pro Gln Gly Asp Arg Gly Phe Pro Gly Thr Pro
660 665 670
Gly Arg Pro Gly Leu Pro Gly Glu Lys Gly Ala Val Gly Gln Pro Gly
675 680 685
Ile Gly Phe Pro Gly Pro Pro Gly Pro Lys Gly Val Asp Gly Leu Pro
690 695 700
Gly Asp Met Gly Pro Pro Gly Thr Pro Gly Arg Pro Gly Phe Asn Gly
705 710 715 720
Leu Pro Gly Asn Pro Gly Val Gln Gly Gln Lys Gly Glu Pro Gly Val
725 730 735
Gly Leu Pro Gly Leu Lys Gly Leu Pro Gly Leu Pro Gly Ile Pro Gly
740 745 750
Thr Pro Gly Glu Lys Gly Ser Ile Gly Val Pro Gly Val Pro Gly Glu
755 760 765
His Gly Ala Ile Gly Pro Pro Gly Leu Gln Gly Ile Arg Gly Glu Pro
770 775 780
Gly Pro Pro Gly Leu Pro Gly Ser Val Gly Ser Pro Gly Val Pro Gly
785 790 795 800
Ile Gly Pro Pro Gly Ala Arg Gly Pro Pro Gly Gly Gln Gly Pro Pro
805 810 815
Gly Leu Ser Gly Pro Pro Gly Ile Lys Gly Glu Lys Gly Phe Pro Gly
820 825 830
Phe Pro Gly Leu Asp Met Pro Gly Pro Lys Gly Asp Lys Gly Ala Gln
835 840 845
Gly Leu Pro Gly Ile Thr Gly Gln Ser Gly Leu Pro Gly Leu Pro Gly
850 855 860
Gln Gln Gly Ala Pro Gly Ile Pro Gly Phe Pro Gly Ser Lys Gly Glu
865 870 875 880
Met Gly Val Met Gly Thr Pro Gly Gln Pro Gly Ser Pro Gly Pro Val
885 890 895
Gly Ala Pro Gly Leu Pro Gly Glu Lys Gly Asp His Gly Phe Pro Gly
900 905 910
Ser Ser Gly Pro Arg Gly Asp Pro Gly Leu Lys Gly Asp Lys Gly Asp
915 920 925
Val Gly Leu Pro Gly Lys Pro Gly Ser Met Asp Lys Val Asp Met Gly
930 935 940
Ser Met Lys Gly Gln Lys Gly Asp Gln Gly Glu Lys Gly Gln Ile Gly
945 950 955 960
Pro Ile Gly Glu Lys Gly Ser Arg Gly Asp Pro Gly Thr Pro Gly Val

965 970 975
Pro Gly Lys Asp Gly Gln Ala Gly Gln Pro Gly Gln Pro Gly Pro Lys
980 985 990
Gly Asp Pro Gly Ile Ser Gly Thr Pro Gly Ala Pro Gly Leu Pro Gly
995 1000 1005
Pro Lys Gly Ser Val Gly Gly Met Gly Leu Pro Gly Thr Pro Gly Glu
1010 1015 1020
Lys Gly Val Pro Gly Ile Pro Gly Pro Gln Gly Ser Pro Gly Leu Pro
1025 1030 1035 1040
Gly Asp Lys Gly Ala Lys Gly Glu Lys Gly Gln Ala Gly Pro Pro Gly
1045 1050 1055
Ile Gly Ile Pro Gly Leu Arg Gly Glu Lys Gly Asp Gln Gly Ile Ala
1060 1065 1070
Gly Phe Pro Gly Ser Pro Gly Glu Lys Gly Glu Lys Gly Ser Ile Gly
1075 1080 1085
Ile Pro Gly Met Pro Gly Ser Pro Gly Leu Lys Gly Ser Pro Gly Ser
1090 1095 1100
Val Gly Tyr Pro Gly Ser Pro Gly Leu Pro Gly Glu Lys Gly Asp Lys
1105 1110 1115 1120
Gly Leu Pro Gly Leu Asp Gly Ile Pro Gly Val Lys Gly Glu Ala Gly
1125 1130 1135
Leu Pro Gly Thr Pro Gly Pro Thr Gly Pro Ala Gly Gln Lys Gly Glu
1140 1145 1150
Pro Gly Ser Asp Gly Ile Pro Gly Ser Ala Gly Glu Lys Gly Glu Pro
1155 1160 1165
Gly Leu Pro Gly Arg Gly Phe Pro Gly Phe Pro Gly Ala Lys Gly Asp
1170 1175 1180
Lys Gly Ser Lys Gly Glu Val Gly Phe Pro Gly Leu Ala Gly Ser Pro
1185 1190 1195 1200
Gly Ile Pro Gly Ser Lys Gly Glu Gln Gly Phe Met Gly Pro Pro Gly
1205 1210 1215
Pro Gln Gly Gln Pro Gly Leu Pro Gly Ser Pro Gly His Ala Thr Glu
1220 1225 1230
Gly Pro Lys Gly Asp Arg Gly Pro Gln Gly Gln Pro Gly Leu Pro Gly
1235 1240 1245
Leu Pro Gly Pro Met Gly Pro Pro Gly Leu Pro Gly Ile Asp Gly Val
1250 1255 1260
Lys Gly Asp Lys Gly Asn Pro Gly Trp Pro Gly Ala Pro Gly Val Pro
1265 1270 1275 1280
Gly Pro Lys Gly Asp Pro Gly Phe Gln Gly Met Pro Gly Ile Gly Gly
1285 1290 1295
Ser Pro Gly Ile Thr Gly Ser Lys Gly Asp Met Gly Pro Pro Gly Val
1300 1305 1310
Pro Gly Phe Gln Gly Pro Lys Gly Leu Pro Gly Leu Gln Gly Ile Lys
1315 1320 1325
Gly Asp Gln Gly Asp Gln Gly Val Pro Gly Ala Lys Gly Leu Pro Gly
1330 1335 1340
Pro Pro Gly Pro Pro Gly Pro Tyr Asp Ile Ile Lys Gly Glu Pro Gly
1345 1350 1355 1360
Leu Pro Gly Pro Glu Gly Pro Pro Gly Leu Lys Gly Leu Gln Gly Leu
1365 1370 1375
Pro Gly Pro Lys Gly Gln Gln Gly Val Thr Gly Leu Val Gly Ile Pro
1380 1385 1390
Gly Pro Pro Gly Ile Pro Gly Phe Asp Gly Ala Pro Gly Gln Lys Gly
1395 1400 1405
Glu Met Gly Pro Ala Gly Pro Thr Gly Pro Arg Gly Phe Pro Gly Pro
1410 1415 1420
Pro Gly Pro Asp Gly Leu Pro Gly Ser Met Gly Pro Pro Gly Thr Pro
1425 1430 1435 1440
Ser Val Asp His Gly Phe Leu Val Thr Arg His Ser Gln Thr Ile Asp
1445 1450 1455

```
Asp Pro Gln Cys Pro Ser Gly Thr Lys Ile Leu Tyr His Gly Tyr Ser
            1460                1465                1470
Leu Leu Tyr Val Gln Gly Asn Glu Arg Ala His Gly Gln Asp Leu Gly
        1475                1480                1485
Thr Ala Gly Ser Cys Leu Arg Lys Phe Ser Thr Met Pro Phe Leu Phe
    1490                1495                1500
Cys Asn Ile Asn Asn Val Cys Asn Phe Ala Ser Arg Asn Asp Tyr Ser
1505                1510                1515                1520
Tyr Trp Leu Ser Thr Pro Glu Pro Met Pro Met Ser Met Ala Pro Ile
                1525                1530                1535
Thr Gly Glu Asn Ile Arg Pro Phe Ile Ser Arg Cys Ala Val Cys Glu
            1540                1545                1550
Ala Pro Ala Met Val Met Ala Val His Ser Gln Thr Ile Gln Ile Pro
        1555                1560                1565
Pro Cys Pro Ser Gly Trp Ser Ser Leu Trp Ile Gly Tyr Ser Phe Val
    1570                1575                1580
Met His Thr Ser Ala Gly Ala Glu Gly Ser Gly Gln Ala Leu Ala Ser
1585                1590                1595                1600
Pro Gly Ser Cys Leu Glu Glu Phe Arg Ser Ala Pro Phe Ile Glu Cys
                1605                1610                1615
His Gly Arg Gly Thr Cys Asn Tyr Tyr Ala Asn Ala Tyr Ser Phe Trp
            1620                1625                1630
Leu Ala Thr Ile Glu Arg Ser Glu Met Phe Lys Lys Pro Thr Pro Ser
        1635                1640                1645
Thr Leu Lys Ala Gly Glu Leu Arg Thr His Val Ser Arg Cys Gln Val
    1650                1655                1660
Cys Met Arg Arg Thr
1665
```

<210> 253
<211> 2798
<212> DNA
<213> Homo sapiens

<400> 253

```
gccctctccc acagcggagt ccaaaacagg cctaccagtc agttcttatt tctattgggt      60
gtttccatgc tccaccatgt taagagctaa gaatcagctt tttttacttt cacctcatta     120
cctgaggcag gtaaaagaat catcaggctc caggctcata cagcaacgac ttctacacca     180
gcaacagccc cttcacccag aatgggctgc cctggctaaa aagcagctga aaggcaaaaa     240
cccagaagac ctaatatggc acaccccgga agggatctct ataaaaccct tgtattccaa     300
gagagatact atggacttac ctgaagaact tccaggagtg aagccattca cacgtggacc     360
atatcctacc atgtatacct ttaggccctg gaccatccgc cagtatgctg gttttagtac     420
tgtggaagaa agcaataagt tctataagga caacattaag gctggtcagc agggattatc     480
agttgccttt gatctggcga cacatcgtgg ctatgattca gacaaccctc gagttcgtgg     540
tgatgttgga atggctggag ttgctattga cactgtggaa gataccaaaa ttctttttga     600
tggaattcct ttagaaaaaa tgtcagtttc catgactatg aatggagcag ttattccagt     660
tcttgcaaat tttatagtaa ctggagaaga acaaggtgta cctaaagaga aacttactgg     720
taccatccaa aatgatatac taaaggaatt tatggttcga aatacataca tttttcctcc     780
agaaccatcc atgaaaatta ttgctgacat atttgaatat acagcaaagc acatgccaaa     840
atttaattca atttcaatta gtggatacca tatgcaggaa gcaggggctg atgccattct     900
ggagctggcc tatactttag cagatggatt ggagtactct agaactggac tccaggctgg     960
cctgacaatt gatgaatttg caccaaggtt gtctttcttc tggggaattg gaatgaattt    1020
ctatatggaa atagcaaaga tgagagctgg tagaagactc tgggctcact taatagagaa    1080
aatgtttcag cctaaaaact caaaatctct tcttctaaga gcacactgtc agacatctgg    1140
atggtcactt actgagcagg atccctacaa taatattgtc cgtactgcaa tagaagcaat    1200
ggcagcagta tttggaggga ctcagtcttt gcacacaaat tcttttgatg aagctttggg    1260
tttgccaact gtgaaaagtg ctcgaattgc caggaacaca caaatcatca ttcaagaaga    1320
atctgggatt cccaaagtgg ctgatccttg gggaggttct tacatgatgg aatgtctcac    1380
aaatgatgtt tatgatgctg ctttaaagct cattaatgaa attgaagaaa tgggtggaat    1440
ggccaaagct gtagctgagg gaatacctaa acttcgaatt gaagaatgtg ctgcccgaag    1500
acaagctaga atagattctg gttctgaagt aattgttgga gtaaataagt accagttgga    1560
```

```
aaaagaagac gctgtagaag ttctggcaat tgataatact tcagtgcgaa acaggcagat    1620
tgaaaaactt aagaagatca aatccagcag ggatcaagct ttggctgaac attgtcttgc    1680
tgcactaacc gaatgtgctg ctagcggaga tggaaatatc ctggctcttg cagtggatgc    1740
atctcgggca agatgtacag tgggagaaat cacagatgcc ctgaaaaagg tatttggtga    1800
acataaagcg aatgatcgaa tggtgagtgg agcatatcgc caggaatttg gagaaagtaa    1860
agagataaca tctgctatca agagggttca taaattcatg gaacgtgaag gtcgcagacc    1920
tcgtcttctt gtagcaaaaa tgggacaaga tggccatgac agaggagcaa aagttattgc    1980
tacaggattt gctgatcttg gttttgatgt ggacataggc cctcttttcc agactcctcg    2040
tgaagtggcc cagcaggctg tggatgcgga tgtgcatgct gtgggcgtaa gcaccctcgc    2100
tgctggtcat aaaaccctag ttcctgaact catcaaagaa cttaactccc ttggacggcc    2160
agatattctt gtcatgtgtg gaggggtgat accacctcag gattatgaat ttctgtttga    2220
agttggtgtt tccaatgtat ttggtcctgg gactcgaatt ccaaaggctg ccgttcaggt    2280
gcttgatgat attgagaagt gtttggaaaa gaagcagcaa tctgtataat atcctctttt    2340
tgttttagct tttgtctaaa atattatttt agttatgatc aaagaagaga gtaaagctat    2400
gtcttcaatt taatttcaat acctgatttg tactttcctt gaaagcttta ctttaaaata    2460
ccttacttat aggcctggtg tcatgctata agtatgtaca tacagtttca cttcaaaaat    2520
aaaaaaaaat ccctaaaaac tctctatact ctctataaca atactttatc aagaactctg    2580
gacaatggta ttatttttaa aaatcatggt gatgtattta ttagaatgtt tcttataaat    2640
ctctttcatt tttatattaa gaattaaact gtacctaaaa aaactctgac tattcccatt    2700
tctcagttta gcattacatt gtcttgagca ccagaaaata aaatccatat attaattaaa    2760
acctatcttg aaaaaaaaaa aaaaaaaaaa aaaaaaaa                            2798
```

<210> 254
<211> 750
<212> PRT
<213> Homo sapiens

<400> 254

```
Met Leu Arg Ala Lys Asn Gln Leu Phe Leu Leu Ser Pro His Tyr Leu
 1               5                  10                  15
Arg Gln Val Lys Glu Ser Ser Gly Ser Arg Leu Ile Gln Gln Arg Leu
            20                  25                  30
Leu His Gln Gln Gln Pro Leu His Pro Glu Trp Ala Ala Leu Ala Lys
        35                  40                  45
Lys Gln Leu Lys Gly Lys Asn Pro Glu Asp Leu Ile Trp His Thr Pro
    50                  55                  60
Glu Gly Ile Ser Ile Lys Pro Leu Tyr Ser Lys Arg Asp Thr Met Asp
65                  70                  75                  80
Leu Pro Glu Glu Leu Pro Gly Val Lys Pro Phe Thr Arg Gly Pro Tyr
                85                  90                  95
Pro Thr Met Tyr Thr Phe Arg Pro Trp Thr Ile Arg Gln Tyr Ala Gly
            100                 105                 110
Phe Ser Thr Val Glu Glu Ser Asn Lys Phe Tyr Lys Asp Asn Ile Lys
        115                 120                 125
Ala Gly Gln Gln Gly Leu Ser Val Ala Phe Asp Leu Ala Thr His Arg
    130                 135                 140
Gly Tyr Asp Ser Asp Asn Pro Arg Val Arg Gly Asp Val Gly Met Ala
145                 150                 155                 160
Gly Val Ala Ile Asp Thr Val Glu Asp Thr Lys Ile Leu Phe Asp Gly
                165                 170                 175
Ile Pro Leu Glu Lys Met Ser Val Ser Met Thr Met Asn Gly Ala Val
            180                 185                 190
Ile Pro Val Leu Ala Asn Phe Ile Val Thr Gly Glu Glu Gln Gly Val
        195                 200                 205
Pro Lys Glu Lys Leu Thr Gly Thr Ile Gln Asn Asp Ile Leu Lys Glu
    210                 215                 220
Phe Met Val Arg Asn Thr Tyr Ile Phe Pro Pro Glu Pro Ser Met Lys
225                 230                 235                 240
Ile Ile Ala Asp Ile Phe Glu Tyr Thr Ala Lys His Met Pro Lys Phe
                245                 250                 255
Asn Ser Ile Ser Ile Ser Gly Tyr His Met Gln Glu Ala Gly Ala Asp
```

```
            260                 265                 270
Ala Ile Leu Glu Leu Ala Tyr Thr Leu Ala Asp Gly Leu Glu Tyr Ser
        275                 280                 285
Arg Thr Gly Leu Gln Ala Gly Leu Thr Ile Asp Glu Phe Ala Pro Arg
    290                 295                 300
Leu Ser Phe Phe Trp Gly Ile Gly Met Asn Phe Tyr Met Glu Ile Ala
305                 310                 315                 320
Lys Met Arg Ala Gly Arg Arg Leu Trp Ala His Leu Ile Glu Lys Met
                325                 330                 335
Phe Gln Pro Lys Asn Ser Lys Ser Leu Leu Leu Arg Ala His Cys Gln
            340                 345                 350
Thr Ser Gly Trp Ser Leu Thr Glu Gln Asp Pro Tyr Asn Asn Ile Val
        355                 360                 365
Arg Thr Ala Ile Glu Ala Met Ala Ala Val Phe Gly Gly Thr Gln Ser
    370                 375                 380
Leu His Thr Asn Ser Phe Asp Glu Ala Leu Gly Leu Pro Thr Val Lys
385                 390                 395                 400
Ser Ala Arg Ile Ala Arg Asn Thr Gln Ile Ile Ile Gln Glu Glu Ser
                405                 410                 415
Gly Ile Pro Lys Val Ala Asp Pro Trp Gly Gly Ser Tyr Met Met Glu
            420                 425                 430
Cys Leu Thr Asn Asp Val Tyr Asp Ala Ala Leu Lys Leu Ile Asn Glu
        435                 440                 445
Ile Glu Glu Met Gly Gly Met Ala Lys Ala Val Ala Glu Gly Ile Pro
    450                 455                 460
Lys Leu Arg Ile Glu Glu Cys Ala Ala Arg Arg Gln Ala Arg Ile Asp
465                 470                 475                 480
Ser Gly Ser Glu Val Ile Val Gly Val Asn Lys Tyr Gln Leu Glu Lys
                485                 490                 495
Glu Asp Ala Val Glu Val Leu Ala Ile Asp Asn Thr Ser Val Arg Asn
            500                 505                 510
Arg Gln Ile Glu Lys Leu Lys Lys Ile Lys Ser Ser Arg Asp Gln Ala
        515                 520                 525
Leu Ala Glu His Cys Leu Ala Ala Leu Thr Glu Cys Ala Ala Ser Gly
    530                 535                 540
Asp Gly Asn Ile Leu Ala Leu Ala Val Asp Ala Ser Arg Ala Arg Cys
545                 550                 555                 560
Thr Val Gly Glu Ile Thr Asp Ala Leu Lys Lys Val Phe Gly Glu His
                565                 570                 575
Lys Ala Asn Asp Arg Met Val Ser Gly Ala Tyr Arg Gln Glu Phe Gly
            580                 585                 590
Glu Ser Lys Glu Ile Thr Ser Ala Ile Lys Arg Val His Lys Phe Met
        595                 600                 605
Glu Arg Glu Gly Arg Arg Pro Arg Leu Leu Val Ala Lys Met Gly Gln
    610                 615                 620
Asp Gly His Asp Arg Gly Ala Lys Val Ile Ala Thr Gly Phe Ala Asp
625                 630                 635                 640
Leu Gly Phe Asp Val Asp Ile Gly Pro Leu Phe Gln Thr Pro Arg Glu
                645                 650                 655
Val Ala Gln Gln Ala Val Asp Ala Asp Val His Ala Val Gly Val Ser
            660                 665                 670
Thr Leu Ala Ala Gly His Lys Thr Leu Val Pro Glu Leu Ile Lys Glu
        675                 680                 685
Leu Asn Ser Leu Gly Arg Pro Asp Ile Leu Val Met Cys Gly Gly Val
    690                 695                 700
Ile Pro Pro Gln Asp Tyr Glu Phe Leu Phe Glu Val Gly Val Ser Asn
705                 710                 715                 720
Val Phe Gly Pro Gly Thr Arg Ile Pro Lys Ala Ala Val Gln Val Leu
                725                 730                 735
Asp Asp Ile Glu Lys Cys Leu Glu Lys Lys Gln Gln Ser Val
            740                 745                 750
```

<210> 255
<211> 806
<212> DNA
<213> Homo sapiens

<400> 255
agcctgggtg acagagtaag actgtcgcca aaaaagagga aaaaagttat ccagtgcagt 60
ttctacagag ataaaagaag taatagttct ggctgggtgt ggtggcttat gcctgtaatc 120
ccaacacttt gggaggccaa ggcaggtgga tcacatgagg tcaggagttc gagaccagcc 180
tggccaacat ggcaaaactg tctctactaa aaatataaaa attaggtatg gtggcacgtg 240
cctgtactta cagctacttg ggaggctgag gcatgagatg acaatctctt gaacccagga 300
ggcggaggtt gcagtgagct gagattgcac cactgcactc cagcttgggt gatggagtga 360
gactcaaata aaaaaggtac tagttctgca tttcagagtt ggcttgttga accaggctat 420
atgcttccaa gatttaaatg tttttctgta ttatactctc aattgtgttt taaaaaaatc 480
tcttacagaa atctctacct caggcactaa gtgttatgac atgggtagca tattgatatt 540
gaaaacttag ctaggacttc cagcctttta agataattta aatgtaaaat taaatggtta 600
accagcaatc taatgtcatg tggtgtgcag tttggatatt gcatgaacag ctaaggaatc 660
acctgttcta gtgccaaaga tcactcattg ctaattttgt tctgtacagc ttatgtaata 720
ttttcatggt ggagacggac tctgtgtgct cagggccttg tctctaggaa gattttgtca 780
attccaaata cagttttgaa gattca 806

<210> 256
<211> 9192
<212> DNA
<213> Homo sapiens

<400> 256
atgcggagta ggcttccccc agcgcttgcc gccctgggcg cggccctact cctgtcttcc 60
attgaggcag aagttgaccc accttcagac ttgaatttta aaattataga tgaaaatact 120
gttcatatgt catgggcaga accagttgat ccaattgtgg gttacagaat aacggtggac 180
cctacaacgg atgggcctac taaagaattt acccttttcag ctagtaccac tgaaacttta 240
ttgtcagaac ttgtacctga aacagagtat gtggtgacaa taacttcata tgatgaagta 300
gaagaaagtg taccagttat aggacaacta acaattcaaa caggtagttc gacaaagcca 360
gtggagaaga aacctggaaa aaccgagata caaaaatgct ctgtcagtgc ctggactgat 420
ttggttttcc tcgtggatgg ctcttggagt gtgggaagaa ataatttcaa gtacatttta 480
gacttcattg ctgctcttgt gtctgctttt gacattgggg aagagaagac aagagttgga 540
gttgttcaat acagctctga caccaggact gaatttaact taaatcagta ctaccaaagg 600
gatgaacttc ttgctgcaat aaaaaaaatt ccatataaag gtggcaacac aatgacaggg 660
gatgccattg attatttagt taaaaatact ttcacggaat ctgctggggc aagagttggc 720
tttcctaaag tggcaattat tattacggat ggaaaatccc aggatgaagt ggaaattcca 780
gcaagagagc ttcgtaatgt tggagttgaa gttttctcct tgggcattaa agctgcagat 840
gcaaaagaac tcaaacaaat tgcctccaca ccttcactga accatgtttt caatgtggcc 900
aactttgatg caattgtgga tattcagaat gagatcatct cccaggtgtg ctcaggagtt 960
gatgagcagc ttggtgaatt ggttagtgga gaagaagttg ttgagcctcc ttcaaatttg 1020
attgccatgg aagtctcttc aaaatatgtt aagctaaatt ggaatccatc tcctagtcca 1080
gtgactggct acaaagtcat cctcacacca atgactgcag gaagccgaca gcacgctctg 1140
agtgtggggc ctcagacaac cacgctcagt gttcgcgacc tctcagcaga cacggagtac 1200
cagatcagtg tttccgccat gaagggaatg acatccagtg aacccatttc aataatggag 1260
aagactcagc caatgaaagt tcaagtggaa tgttcacgtg gtgtggatat aaaagccgat 1320
attgtgtttt tggttgatgg ctcctatagc attgggattg caaactttgt taaagttaga 1380
gccttttgg aagttcttgt aaaaagtttt gaaatttcac caaatagggt ccagattagt 1440
cttgtgcaat acagccggga tcctcatact gagttcactt tgaaaaaatt caccaaagtt 1500
gaagatataa ttgaagcaat aaacaccttc ccttacagag gaggatctac aaatactggc 1560
aaagcaatga cttatgtcag agagaaaata tttgtgccta gcaagggatc aagaagcaat 1620
gtgccaaagg tcatgattct tatcacggat gggaaatcat cagatgcttt cagagatcct 1680
gcgataaaac tgaggaattc agatgttgaa atctttgcag ttggtgtgaa ggatgccgtt 1740
cgctcagaat tggaagctat tgcctctcct cctgcagaga cccatgtgtt cacagtggaa 1800
gattttgatg cttttcagag gatatctttt gaactcacac agtctatctg tcttagaatt 1860
gagcaagaat tggcagctat aaagaagaaa gcttacgtcc ctccaaagga tcttagtttt 1920
tcagaagtga cttcttatgg tttcaaaacc aactggtctc cagctggaga aaatgttttt 1980

tcatatcaca tcacctacaa ggaagcggct ggggatgatg aggtcactgt ggtggagcca 2040
gcatcgagca ccagtgttgt tctcagcagc ctgaagccag agaccttgta tttggtcaat 2100
gtgactgcgg agtatgagga tggcttcagc attcccttag ctggagagga gaccaccgaa 2160
gaagtaaaag gagcacctcg aaacctaaag gtgacagatg agactacaga tagtttcaaa 2220
attacttgga ctcaagctcc agggagagtt ttaagatgtc gaattatata tagaccagtt 2280
gctggtggag agagcagaga agttaccacc ccacccaatc agaggaggag aacactggag 2340
aacttgattc cagacacgaa atatgaagta tctgtaattc ctgaatactt ctcaggacct 2400
ggtactccat taactggaaa tgcagccact gaagaagtta gagggaatcc aagagactta 2460
agagtttctg accctacgac gtctactatg aaattatctt ggagtggggc accaggaaaa 2520
gtgaaacagt atctcgtcac atatacccca gtggcagggg gtgaaactca agaggtcact 2580
gtgaggggag atacaaccaa tacggtgctg cagggattga aggaagggac acaatacgcc 2640
ttatctgtga cagcactgta tgcgtctggg gctggcgacg ccctctttgg tgaaggaaca 2700
acacttgaag aacgtggttc tcctcaagat ttagttacta aagacatcac tgacacatca 2760
attggggctt attggacatc tgctccagga atggttcgcg gttacagggt ctcatggaaa 2820
tcactttatg atgatgttga cactggagag aaaaatctgc ctgaagatgc aattcatacg 2880
atgatagaaa atctgcagcc agagaccaaa tacagaattt cagtatttgc cacttacagc 2940
agtggagaag gagaaccttt gactggagat gccacaactg aattatctca agattccaaa 3000
accctgaaag tagatgaaga aacagaaaac acaatgagag ttacatggaa accagcacca 3060
gggaaagtcg tcaactaccg tgttgtctat cgccctcatg ggagagggaa gcaaatggtt 3120
gctaaggtgc cccccacagt cacttcgaca gtgttaaagc gacttcagcc acagaccaca 3180
tatgacatca cagttcttcc tatttacaag atgggagaag gaaagcttag gcaaggatca 3240
ggaacaacag cttctcggtt taagtctcct agaaacctca aaacatctga cccaaccatg 3300
tcaagcttcc gagtgacttg ggagcctgcc cctggggaag tgaagggtta taaagtcaca 3360
ttccacccta cgggggatga cagaagactg ggggagttag tggttggacc ctatgacaac 3420
acagttgttt tggaggaact tagggctggt accacctata aagtaaatgt ttttggaatg 3480
tttgatggag gagaaagctc accacttgtt ggacaagaaa tgacaaccct ttccgacaca 3540
actgttatgc caatttttatc ttctgggatg gagtgtctca ccagagctga ggcagacatt 3600
gtgttgctgg tggatggatc atggagcatc ggccgggcaa attttagaac cgtgaggagt 3660
ttcatttctc gtattgtgga agtctttgac attggcccca aaagagtaca aattgctctt 3720
gctcagtata gtggggatcc cagaacagag tggcagttaa atgcacacag agacaagaag 3780
agcttgttgc aagctgtggc aaacttgccg tacaaaggag gcaatactct cacaggcatg 3840
gctttgaatt tcattcgcca acagaacttc aggacccaag ctggcatgag acctcgagct 3900
cgaaaaattg gtgtgctcat tactgatgga aaatcacaag acgatgttga agcaccttca 3960
aagaaactca aggatgaggg agtggagctg tttgctattg gtattaaaaa tgctgatgaa 4020
gtcgaattaa agatgattgc aactgatcct gatgataccc atgactacaa tgtggcagat 4080
tttgagtcac tctccaggat agtggatgat ctcaccatta atttgtgtaa cagtgtcaaa 4140
ggtccaggtg atttggaagc accttctaac ttagttattt ctgagcgaac ccatcgttct 4200
tttagagtga gctggacacc accttctgac agtgtggatc gatataaggt ggaatactat 4260
ccagtttctg gagggaaacg tcaagaattt tatgtgagtc gaatggaaac tagcacagtg 4320
ctgaaagatc tgaaacctga aactgaatat gttgtcaatg tgtattctgt ggtagaagat 4380
gaatatagtg agcctctgaa ggggacagaa aaaaccttgc cagtgcctgt agtcagcctg 4440
aatatttatg atgttggccc taccaccatg catgtgcagt ggcagcctgt gggaggagct 4500
actggctaca tcttgtcata caaacctgtt aaggacacag agccaacaag acccaaagag 4560
gtgcgtttgg ggccaacagt gaatgacatg cagctgactg accttgttcc caacacggag 4620
tatgcagtca cagtccaggc tgtcctgcac gacctcacta gtgaacctgt cactgttcgg 4680
gaagtcacct tgcctttacc cagacctcag gatctgaaac tcagagatgt gactcacagc 4740
actatgaatg tcttttggga acctgtgcct ggaaaagtgc gtaaatatat tgttcgatac 4800
aaaacaccag aagaggatgt caaagaggta gaggtggaca gatcagagac cagcacttcc 4860
ctcaaagacc tcttctcaca gaccttgtac acagtcagcg tttctgcagt acatgacgag 4920
ggggagtctc ctccagtgac tgctcaagaa actacccgac ccgtgccagc cccaacaaac 4980
ttaaagatta ctgaagtaac atcagagggt ttcagaggga cttgggatca tggagcttca 5040
gatgtgtctc tctacagaat aacttgggga ccttttggaa gctcagataa gatggagacc 5100
atcttaaatg gagatgaaaa cactttggtg ttcgaaaacc tgaaccccaa caccatctat 5160
gaagtttcca ttactgccat ctatgctgat gagtcagaaa gtgatgacct gattggcagt 5220
gagcgcactc tgcctatctt aacaacacaa gctcccaaaa gtgggccacg aaaccttcaa 5280
gtgtacaatg caacatctaa cagcctgact gttaagtggg atcctgctag tggtcgtgtg 5340
cagaaatata ggatcactta tcagccttcc acaggggaag gcaatgagca aacgaccaca 5400
ataggaggac ggcagaacag tgtggtcctg cagaaactga agccagacac tccttacact 5460
atcaccgtat cctctctgta tcctgatggt gaaggaggtc ggatgacggg aagaggcaag 5520
accaaacctc taaacactgt aaggaacctg agagtgtatg acccttctac cagcactctg 5580
aatgtccgct gggaccatgc agagggaaat cctcgtcagt acaagctctt ctatgcacca 5640

gcagcaggtg gtccagagga actggtacca atccccggga ataccaatta tgccattctt 5700
aggaatctgc agccagatac ctcatacact gtgactgtag ttcccgttta tactgaaggt 5760
gatgggggac gcacatcaga tactggaagg acattgatga gaggactggc aagaaatgtc 5820
caagtataca atcctacacc taacaggctc ggtgttcgct gggaccctgc accaggacct 5880
gtgctgcaat atcgcgttgt gtattctcct gtggatggca caagaccctc agaatctata 5940
gtagtgccag gaaacacgcg catggtgcat ctggagcggc tgattccgga cacactctat 6000
tccgtgaacc ttgtggctct gtactcggat ggagagggaa atcccagccc tgcccagggc 6060
cgaacgctac cacgcagtgg accaaggaac ctgagagtct ttggtgaaac aaccaatagc 6120
ctctcggtag cctgggatca tgctgatggg ccagttcagc agtacaggat catctattct 6180
cccactgttg gtgatccaat tgatgaatat accacagtcc caggcagaag aaacaatgta 6240
atactgcagc ccctgcaacc tgacactcca tataaaatta ctgttattgc tgtttatgaa 6300
gatggagatg gtggccatct aacaggaaat ggaagaactg tgggactcct tcctcctcag 6360
aacatacaca tctctgacga atggtataca agattcaggg tgtcctggga tccttcacct 6420
tctccagttc ttggatataa aatagtatat aagccagtgg gttccaatga gcccatggaa 6480
gcctttgttg gagaaatgac atcatatacc ttacacaatc tcaatcccag caccacctac 6540
gatgtgaatg tttatgctca atatgattct ggactcagtg tccccttgac agatcaaggc 6600
actacattat atttaaatgt aacagatctg aaaacttacc agattgggtg ggatacattc 6660
tgtgtcaaat ggtcacctca ccgggcagcc acctcctaca ggctaaaact aagccctgca 6720
gatggaacca ggggacaaga aattacagtg cgtggatcag aaaccagtca ctgcttcact 6780
ggcctttcac cagacactga ttatggtgtc actgtttttg tgcagacacc aaatctcgag 6840
ggaccaggag tctctgttaa agaacatacc actgtgaaac caacagaagc ccctacagag 6900
ccacccacac ctcctccccc tcccaccatt ccaccagccc gggatgtatg caaaggggcc 6960
aaggcagata ttgtgttctt gactgatgcc tcctggagca ttggggacga taattttaac 7020
aaagttgtaa aattcatctt caatactgtg ggaggctttg atgaaatcag tcctgctggg 7080
attcaggttt catttgtgca atacagcgat gaggtcaagt ctgagttcaa gctgaacacg 7140
tacaatgaca aggccctagc ccttggggcc ctccagaata ttaggtacag aggaggaaac 7200
acaagaacag gcaaggccct cacgtttatc aaggagaaag tcttgacttg ggagagcggc 7260
atgaggaaga atgtccctaa ggtgttggtt gtggtcacgg acggtcggtc ccaggatgag 7320
gtcaagaagg cggctttggt catccagcag tcagggttca gtgtctttgt agttggtgtg 7380
gctgatgtcg actacaatga gcttgccaac attgccagca aaccaagtga acggcacgtg 7440
ttcattgtgg acgactttga atcttttgag aagatcgaag acaatcttat tacatttgtt 7500
tgtgaaactg ccacttcaag ttgtcctctc atttatttgg atggctacac ctcaccaggt 7560
tttaaaatgc ttgaagcata caacctgaca gaaaagaatt ttgcttctgt acaaggagta 7620
tctttggagt cagggtcttt ccccagctac tcagcataca ggattcagaa gaatgcgttt 7680
gtgaatcagc ctacagcaga cctacaccca aatggactcc ctccttcata cacgattata 7740
ttattattca gacttctccc agaaactccc agtgaccctt ttgcaatttg gcaaatcaca 7800
gacagagact acaaaccaca agttggagtg attgcagatc cttctagcaa gacgttatca 7860
ttctttaaca aggatacaag aggcgaggtg caaactgtta catttgacac agaagaagta 7920
aagacattat tttatggaag ttttcacaag gttcatattg tagtgacctc aaaaagtgtt 7980
aagatttaca ttgactgcta tgaaattata gaaaaagaca tcaaggaagc tggaaatata 8040
acaactgatg gttatgaaat tcttggaaaa ctccttaaag gggaaaggaa atcagccgca 8100
ttccaaatcc agagttttga cattgtctgc agtccagtgt ggaccagtag agacagatgc 8160
tgtgatattc cctctaggag agatgaggga aaatgccctg cttttccaaa ttcttgcaca 8220
tgtacacagg acagcgttgg acctccagga cctccaggcc ctgcaggagg acctggtgct 8280
aaaggtccca gaggtgaaag aggtatcagt ggggcaattg ggccccctgg tcctcgtgga 8340
gacataggtc ctccaggccc ccagggtcct ccaggccctc agggacccaa tggactctct 8400
attccgggag agcaaggtcg ccaagggatg aaaggtgatg ctggagagcc aggacttcca 8460
ggccgaacag gaaccccagg attacctggc ccaccaggac caatgggacc tccaggagac 8520
agaggcttca ctggaaaaga cagtgcaatg ggacccaggg gcccaccagg gcggccggga 8580
agcccaggct ccccaggagt cacaggacca agtgggaagc caggaaaacc tggagatcat 8640
ggcagaccag gtccatctgg gttgaaagga gaaaaaggtg ataggggaga cattgcttcc 8700
cagaacatga tgcgagcagt tgcaagacaa gtctgtgaac aattgataag tggtcagatg 8760
aacagattca atcagatgct gaatcagatt ccaaatgatt accagtccag tcgcaaccag 8820
ccaggcccgc cgggtccacc gggacctcct ggtagcgcag gagccagagg agaacctggg 8880
cctgggggcc ggccaggctt cccgggcaca ccagggatgc agggaccccc tggggaacga 8940
ggtttgccag gagagaaagg tgaaaggggt actggatctt caggacctcg ggggctgcct 9000
gggcccccag gtccacaagg agaatccaga acaggtccac cagggtccac aggttcaaga 9060
ggtccccctg gccccctgg ccgtcctgga aactcaggta tccagggccc cccaggtcct 9120
cctggatact gtgattcttc tcagtgtgcc agcatcccat acaacgggca aagctatcca 9180
ggttccggct aa 9192

<210> 257
<211> 3063
<212> PRT
<213> Homo sapiens

<400> 257

```
Met Arg Ser Arg Leu Pro Pro Ala Leu Ala Ala Leu Gly Ala Ala Leu
 1               5                  10                  15
Leu Leu Ser Ser Ile Glu Ala Glu Val Asp Pro Pro Ser Asp Leu Asn
            20                  25                  30
Phe Lys Ile Ile Asp Glu Asn Thr Val His Met Ser Trp Ala Glu Pro
        35                  40                  45
Val Asp Pro Ile Val Gly Tyr Arg Ile Thr Val Asp Pro Thr Thr Asp
    50                  55                  60
Gly Pro Thr Lys Glu Phe Thr Leu Ser Ala Ser Thr Thr Glu Thr Leu
65                  70                  75                  80
Leu Ser Glu Leu Val Pro Glu Thr Glu Tyr Val Val Thr Ile Thr Ser
                85                  90                  95
Tyr Asp Glu Val Glu Glu Ser Val Pro Val Ile Gly Gln Leu Thr Ile
            100                 105                 110
Gln Thr Gly Ser Ser Thr Lys Pro Val Glu Lys Lys Pro Gly Lys Thr
        115                 120                 125
Glu Ile Gln Lys Cys Ser Val Ser Ala Trp Thr Asp Leu Val Phe Leu
    130                 135                 140
Val Asp Gly Ser Trp Ser Val Gly Arg Asn Asn Phe Lys Tyr Ile Leu
145                 150                 155                 160
Asp Phe Ile Ala Ala Leu Val Ser Ala Phe Asp Ile Gly Glu Glu Lys
                165                 170                 175
Thr Arg Val Gly Val Val Gln Tyr Ser Ser Asp Thr Arg Thr Glu Phe
            180                 185                 190
Asn Leu Asn Gln Tyr Tyr Gln Arg Asp Glu Leu Leu Ala Ala Ile Lys
        195                 200                 205
Lys Ile Pro Tyr Lys Gly Gly Asn Thr Met Thr Gly Asp Ala Ile Asp
    210                 215                 220
Tyr Leu Val Lys Asn Thr Phe Thr Glu Ser Ala Gly Ala Arg Val Gly
225                 230                 235                 240
Phe Pro Lys Val Ala Ile Ile Ile Thr Asp Gly Lys Ser Gln Asp Glu
                245                 250                 255
Val Glu Ile Pro Ala Arg Glu Leu Arg Asn Val Gly Val Glu Val Phe
            260                 265                 270
Ser Leu Gly Ile Lys Ala Ala Asp Ala Lys Glu Leu Lys Gln Ile Ala
        275                 280                 285
Ser Thr Pro Ser Leu Asn His Val Phe Asn Val Ala Asn Phe Asp Ala
    290                 295                 300
Ile Val Asp Ile Gln Asn Glu Ile Ile Ser Gln Val Cys Ser Gly Val
305                 310                 315                 320
Asp Glu Gln Leu Gly Glu Leu Val Ser Gly Glu Glu Val Val Glu Pro
                325                 330                 335
Pro Ser Asn Leu Ile Ala Met Glu Val Ser Ser Lys Tyr Val Lys Leu
            340                 345                 350
Asn Trp Asn Pro Ser Pro Ser Pro Val Thr Gly Tyr Lys Val Ile Leu
        355                 360                 365
Thr Pro Met Thr Ala Gly Ser Arg Gln His Ala Leu Ser Val Gly Pro
    370                 375                 380
Gln Thr Thr Thr Leu Ser Val Arg Asp Leu Ser Ala Asp Thr Glu Tyr
385                 390                 395                 400
Gln Ile Ser Val Ser Ala Met Lys Gly Met Thr Ser Ser Glu Pro Ile
                405                 410                 415
Ser Ile Met Glu Lys Thr Gln Pro Met Lys Val Gln Val Glu Cys Ser
```

```
            420                 425                 430
Arg Gly Val Asp Ile Lys Ala Asp Ile Val Phe Leu Val Asp Gly Ser
        435                 440                 445
Tyr Ser Ile Gly Ile Ala Asn Phe Val Lys Val Arg Ala Phe Leu Glu
    450                 455                 460
Val Leu Val Lys Ser Phe Glu Ile Ser Pro Asn Arg Val Gln Ile Ser
465                 470                 475                 480
Leu Val Gln Tyr Ser Arg Asp Pro His Thr Glu Phe Thr Leu Lys Lys
                485                 490                 495
Phe Thr Lys Val Glu Asp Ile Ile Glu Ala Ile Asn Thr Phe Pro Tyr
            500                 505                 510
Arg Gly Gly Ser Thr Asn Thr Gly Lys Ala Met Thr Tyr Val Arg Glu
        515                 520                 525
Lys Ile Phe Val Pro Ser Lys Gly Ser Arg Ser Asn Val Pro Lys Val
    530                 535                 540
Met Ile Leu Ile Thr Asp Gly Lys Ser Ser Asp Ala Phe Arg Asp Pro
545                 550                 555                 560
Ala Ile Lys Leu Arg Asn Ser Asp Val Glu Ile Phe Ala Val Gly Val
                565                 570                 575
Lys Asp Ala Val Arg Ser Glu Leu Glu Ala Ile Ala Ser Pro Pro Ala
            580                 585                 590
Glu Thr His Val Phe Thr Val Glu Asp Phe Asp Ala Phe Gln Arg Ile
        595                 600                 605
Ser Phe Glu Leu Thr Gln Ser Ile Cys Leu Arg Ile Glu Gln Glu Leu
    610                 615                 620
Ala Ala Ile Lys Lys Lys Ala Tyr Val Pro Pro Lys Asp Leu Ser Phe
625                 630                 635                 640
Ser Glu Val Thr Ser Tyr Gly Phe Lys Thr Asn Trp Ser Pro Ala Gly
                645                 650                 655
Glu Asn Val Phe Ser Tyr His Ile Thr Tyr Lys Glu Ala Ala Gly Asp
            660                 665                 670
Asp Glu Val Thr Val Val Glu Pro Ala Ser Ser Thr Ser Val Val Leu
        675                 680                 685
Ser Ser Leu Lys Pro Glu Thr Leu Tyr Leu Val Asn Val Thr Ala Glu
    690                 695                 700
Tyr Glu Asp Gly Phe Ser Ile Pro Leu Ala Gly Glu Glu Thr Thr Glu
705                 710                 715                 720
Glu Val Lys Gly Ala Pro Arg Asn Leu Lys Val Thr Asp Glu Thr Thr
                725                 730                 735
Asp Ser Phe Lys Ile Thr Trp Thr Gln Ala Pro Gly Arg Val Leu Arg
            740                 745                 750
Cys Arg Ile Ile Tyr Arg Pro Val Ala Gly Gly Glu Ser Arg Glu Val
        755                 760                 765
Thr Thr Pro Pro Asn Gln Arg Arg Arg Thr Leu Glu Asn Leu Ile Pro
    770                 775                 780
Asp Thr Lys Tyr Glu Val Ser Val Ile Pro Glu Tyr Phe Ser Gly Pro
785                 790                 795                 800
Gly Thr Pro Leu Thr Gly Asn Ala Ala Thr Glu Glu Val Arg Gly Asn
                805                 810                 815
Pro Arg Asp Leu Arg Val Ser Asp Pro Thr Thr Ser Thr Met Lys Leu
            820                 825                 830
Ser Trp Ser Gly Ala Pro Gly Lys Val Lys Gln Tyr Leu Val Thr Tyr
        835                 840                 845
Thr Pro Val Ala Gly Gly Glu Thr Gln Glu Val Thr Val Arg Gly Asp
    850                 855                 860
Thr Thr Asn Thr Val Leu Gln Gly Leu Lys Glu Gly Thr Gln Tyr Ala
865                 870                 875                 880
Leu Ser Val Thr Ala Leu Tyr Ala Ser Gly Ala Gly Asp Ala Leu Phe
                885                 890                 895
Gly Glu Gly Thr Thr Leu Glu Glu Arg Gly Ser Pro Gln Asp Leu Val
            900                 905                 910
```

Thr Lys Asp Ile Thr Asp Thr Ser Ile Gly Ala Tyr Trp Thr Ser Ala
915 920 925
Pro Gly Met Val Arg Gly Tyr Arg Val Ser Trp Lys Ser Leu Tyr Asp
930 935 940
Asp Val Asp Thr Gly Glu Lys Asn Leu Pro Glu Asp Ala Ile His Thr
945 950 955 960
Met Ile Glu Asn Leu Gln Pro Glu Thr Lys Tyr Arg Ile Ser Val Phe
965 970 975
Ala Thr Tyr Ser Ser Gly Glu Gly Glu Pro Leu Thr Gly Asp Ala Thr
980 985 990
Thr Glu Leu Ser Gln Asp Ser Lys Thr Leu Lys Val Asp Glu Glu Thr
995 1000 1005
Glu Asn Thr Met Arg Val Thr Trp Lys Pro Ala Pro Gly Lys Val Val
1010 1015 1020
Asn Tyr Arg Val Val Tyr Arg Pro His Gly Arg Gly Lys Gln Met Val
1025 1030 1035 1040
Ala Lys Val Pro Pro Thr Val Thr Ser Thr Val Leu Lys Arg Leu Gln
1045 1050 1055
Pro Gln Thr Thr Tyr Asp Ile Thr Val Leu Pro Ile Tyr Lys Met Gly
1060 1065 1070
Glu Gly Lys Leu Arg Gln Gly Ser Gly Thr Thr Ala Ser Arg Phe Lys
1075 1080 1085
Ser Pro Arg Asn Leu Lys Thr Ser Asp Pro Thr Met Ser Ser Phe Arg
1090 1095 1100
Val Thr Trp Glu Pro Ala Pro Gly Glu Val Lys Gly Tyr Lys Val Thr
1105 1110 1115 1120
Phe His Pro Thr Gly Asp Asp Arg Arg Leu Gly Glu Leu Val Val Gly
1125 1130 1135
Pro Tyr Asp Asn Thr Val Val Leu Glu Glu Leu Arg Ala Gly Thr Thr
1140 1145 1150
Tyr Lys Val Asn Val Phe Gly Met Phe Asp Gly Gly Glu Ser Ser Pro
1155 1160 1165
Leu Val Gly Gln Glu Met Thr Thr Leu Ser Asp Thr Thr Val Met Pro
1170 1175 1180
Ile Leu Ser Ser Gly Met Glu Cys Leu Thr Arg Ala Glu Ala Asp Ile
1185 1190 1195 1200
Val Leu Leu Val Asp Gly Ser Trp Ser Ile Gly Arg Ala Asn Phe Arg
1205 1210 1215
Thr Val Arg Ser Phe Ile Ser Arg Ile Val Glu Val Phe Asp Ile Gly
1220 1225 1230
Pro Lys Arg Val Gln Ile Ala Leu Ala Gln Tyr Ser Gly Asp Pro Arg
1235 1240 1245
Thr Glu Trp Gln Leu Asn Ala His Arg Asp Lys Lys Ser Leu Leu Gln
1250 1255 1260
Ala Val Ala Asn Leu Pro Tyr Lys Gly Gly Asn Thr Leu Thr Gly Met
1265 1270 1275 1280
Ala Leu Asn Phe Ile Arg Gln Gln Asn Phe Arg Thr Gln Ala Gly Met
1285 1290 1295
Arg Pro Arg Ala Arg Lys Ile Gly Val Leu Ile Thr Asp Gly Lys Ser
1300 1305 1310
Gln Asp Asp Val Glu Ala Pro Ser Lys Lys Leu Lys Asp Glu Gly Val
1315 1320 1325
Glu Leu Phe Ala Ile Gly Ile Lys Asn Ala Asp Glu Val Glu Leu Lys
1330 1335 1340
Met Ile Ala Thr Asp Pro Asp Asp Thr His Asp Tyr Asn Val Ala Asp
1345 1350 1355 1360
Phe Glu Ser Leu Ser Arg Ile Val Asp Asp Leu Thr Ile Asn Leu Cys
1365 1370 1375
Asn Ser Val Lys Gly Pro Gly Asp Leu Glu Ala Pro Ser Asn Leu Val
1380 1385 1390
Ile Ser Glu Arg Thr His Arg Ser Phe Arg Val Ser Trp Thr Pro Pro

```
        1395                1400                1405
Ser Asp Ser Val Asp Arg Tyr Lys Val Glu Tyr Tyr Pro Val Ser Gly
    1410                1415                1420
Gly Lys Arg Gln Glu Phe Tyr Val Ser Arg Met Glu Thr Ser Thr Val
1425                1430                1435                1440
Leu Lys Asp Leu Lys Pro Glu Thr Glu Tyr Val Val Asn Val Tyr Ser
                1445                1450                1455
Val Val Glu Asp Glu Tyr Ser Glu Pro Leu Lys Gly Thr Glu Lys Thr
            1460                1465                1470
Leu Pro Val Pro Val Val Ser Leu Asn Ile Tyr Asp Val Gly Pro Thr
        1475                1480                1485
Thr Met His Val Gln Trp Gln Pro Val Gly Gly Ala Thr Gly Tyr Ile
    1490                1495                1500
Leu Ser Tyr Lys Pro Val Lys Asp Thr Glu Pro Thr Arg Pro Lys Glu
1505                1510                1515                1520
Val Arg Leu Gly Pro Thr Val Asn Asp Met Gln Leu Thr Asp Leu Val
                1525                1530                1535
Pro Asn Thr Glu Tyr Ala Val Thr Val Gln Ala Val Leu His Asp Leu
            1540                1545                1550
Thr Ser Glu Pro Val Thr Val Arg Glu Val Thr Leu Pro Leu Pro Arg
        1555                1560                1565
Pro Gln Asp Leu Lys Leu Arg Asp Val Thr His Ser Thr Met Asn Val
    1570                1575                1580
Phe Trp Glu Pro Val Pro Gly Lys Val Arg Lys Tyr Ile Val Arg Tyr
1585                1590                1595                1600
Lys Thr Pro Glu Glu Asp Val Lys Glu Val Glu Val Asp Arg Ser Glu
                1605                1610                1615
Thr Ser Thr Ser Leu Lys Asp Leu Phe Ser Gln Thr Leu Tyr Thr Val
            1620                1625                1630
Ser Val Ser Ala Val His Asp Glu Gly Glu Ser Pro Pro Val Thr Ala
        1635                1640                1645
Gln Glu Thr Thr Arg Pro Val Pro Ala Pro Thr Asn Leu Lys Ile Thr
    1650                1655                1660
Glu Val Thr Ser Glu Gly Phe Arg Gly Thr Trp Asp His Gly Ala Ser
1665                1670                1675                1680
Asp Val Ser Leu Tyr Arg Ile Thr Trp Gly Pro Phe Gly Ser Ser Asp
                1685                1690                1695
Lys Met Glu Thr Ile Leu Asn Gly Asp Glu Asn Thr Leu Val Phe Glu
            1700                1705                1710
Asn Leu Asn Pro Asn Thr Ile Tyr Glu Val Ser Ile Thr Ala Ile Tyr
        1715                1720                1725
Ala Asp Glu Ser Glu Ser Asp Asp Leu Ile Gly Ser Glu Arg Thr Leu
    1730                1735                1740
Pro Ile Leu Thr Thr Gln Ala Pro Lys Ser Gly Pro Arg Asn Leu Gln
1745                1750                1755                1760
Val Tyr Asn Ala Thr Ser Asn Ser Leu Thr Val Lys Trp Asp Pro Ala
                1765                1770                1775
Ser Gly Arg Val Gln Lys Tyr Arg Ile Thr Tyr Gln Pro Ser Thr Gly
            1780                1785                1790
Glu Gly Asn Glu Gln Thr Thr Thr Ile Gly Gly Arg Gln Asn Ser Val
        1795                1800                1805
Val Leu Gln Lys Leu Lys Pro Asp Thr Pro Tyr Thr Ile Thr Val Ser
    1810                1815                1820
Ser Leu Tyr Pro Asp Gly Glu Gly Gly Arg Met Thr Gly Arg Gly Lys
1825                1830                1835                1840
Thr Lys Pro Leu Asn Thr Val Arg Asn Leu Arg Val Tyr Asp Pro Ser
                1845                1850                1855
Thr Ser Thr Leu Asn Val Arg Trp Asp His Ala Glu Gly Asn Pro Arg
            1860                1865                1870
Gln Tyr Lys Leu Phe Tyr Ala Pro Ala Ala Gly Gly Pro Glu Glu Leu
        1875                1880                1885
```

Val Pro Ile Pro Gly Asn Thr Asn Tyr Ala Ile Leu Arg Asn Leu Gln
1890 1895 1900
Pro Asp Thr Ser Tyr Thr Val Thr Val Val Pro Val Tyr Thr Glu Gly
1905 1910 1915 1920
Asp Gly Gly Arg Thr Ser Asp Thr Gly Arg Thr Leu Met Arg Gly Leu
1925 1930 1935
Ala Arg Asn Val Gln Val Tyr Asn Pro Thr Pro Asn Arg Leu Gly Val
1940 1945 1950
Arg Trp Asp Pro Ala Pro Gly Pro Val Leu Gln Tyr Arg Val Val Tyr
1955 1960 1965
Ser Pro Val Asp Gly Thr Arg Pro Ser Glu Ser Ile Val Val Pro Gly
1970 1975 1980
Asn Thr Arg Met Val His Leu Glu Arg Leu Ile Pro Asp Thr Leu Tyr
1985 1990 1995 2000
Ser Val Asn Leu Val Ala Leu Tyr Ser Asp Gly Glu Gly Asn Pro Ser
2005 2010 2015
Pro Ala Gln Gly Arg Thr Leu Pro Arg Ser Gly Pro Arg Asn Leu Arg
2020 2025 2030
Val Phe Gly Glu Thr Thr Asn Ser Leu Ser Val Ala Trp Asp His Ala
2035 2040 2045
Asp Gly Pro Val Gln Gln Tyr Arg Ile Ile Tyr Ser Pro Thr Val Gly
2050 2055 2060
Asp Pro Ile Asp Glu Tyr Thr Thr Val Pro Gly Arg Arg Asn Asn Val
2065 2070 2075 2080
Ile Leu Gln Pro Leu Gln Pro Asp Thr Pro Tyr Lys Ile Thr Val Ile
2085 2090 2095
Ala Val Tyr Glu Asp Gly Asp Gly Gly His Leu Thr Gly Asn Gly Arg
2100 2105 2110
Thr Val Gly Leu Leu Pro Pro Gln Asn Ile His Ile Ser Asp Glu Trp
2115 2120 2125
Tyr Thr Arg Phe Arg Val Ser Trp Asp Pro Ser Pro Ser Pro Val Leu
2130 2135 2140
Gly Tyr Lys Ile Val Tyr Lys Pro Val Gly Ser Asn Glu Pro Met Glu
2145 2150 2155 2160
Ala Phe Val Gly Glu Met Thr Ser Tyr Thr Leu His Asn Leu Asn Pro
2165 2170 2175
Ser Thr Thr Tyr Asp Val Asn Val Tyr Ala Gln Tyr Asp Ser Gly Leu
2180 2185 2190
Ser Val Pro Leu Thr Asp Gln Gly Thr Thr Leu Tyr Leu Asn Val Thr
2195 2200 2205
Asp Leu Lys Thr Tyr Gln Ile Gly Trp Asp Thr Phe Cys Val Lys Trp
2210 2215 2220
Ser Pro His Arg Ala Ala Thr Ser Tyr Arg Leu Lys Leu Ser Pro Ala
2225 2230 2235 2240
Asp Gly Thr Arg Gly Gln Glu Ile Thr Val Arg Gly Ser Glu Thr Ser
2245 2250 2255
His Cys Phe Thr Gly Leu Ser Pro Asp Thr Asp Tyr Gly Val Thr Val
2260 2265 2270
Phe Val Gln Thr Pro Asn Leu Glu Gly Pro Gly Val Ser Val Lys Glu
2275 2280 2285
His Thr Thr Val Lys Pro Thr Glu Ala Pro Thr Glu Pro Pro Thr Pro
2290 2295 2300
Pro Pro Pro Pro Thr Ile Pro Pro Ala Arg Asp Val Cys Lys Gly Ala
2305 2310 2315 2320
Lys Ala Asp Ile Val Phe Leu Thr Asp Ala Ser Trp Ser Ile Gly Asp
2325 2330 2335
Asp Asn Phe Asn Lys Val Val Lys Phe Ile Phe Asn Thr Val Gly Gly
2340 2345 2350
Phe Asp Glu Ile Ser Pro Ala Gly Ile Gln Val Ser Phe Val Gln Tyr
2355 2360 2365
Ser Asp Glu Val Lys Ser Glu Phe Lys Leu Asn Thr Tyr Asn Asp Lys

2370 2375 2380
Ala Leu Ala Leu Gly Ala Leu Gln Asn Ile Arg Tyr Arg Gly Gly Asn
2385 2390 2395 2400
Thr Arg Thr Gly Lys Ala Leu Thr Phe Ile Lys Glu Lys Val Leu Thr
2405 2410 2415
Trp Glu Ser Gly Met Arg Lys Asn Val Pro Lys Val Leu Val Val Val
2420 2425 2430
Thr Asp Gly Arg Ser Gln Asp Glu Val Lys Lys Ala Ala Leu Val Ile
2435 2440 2445
Gln Gln Ser Gly Phe Ser Val Phe Val Val Gly Val Ala Asp Val Asp
2450 2455 2460
Tyr Asn Glu Leu Ala Asn Ile Ala Ser Lys Pro Ser Glu Arg His Val
2465 2470 2475 2480
Phe Ile Val Asp Asp Phe Glu Ser Phe Glu Lys Ile Glu Asp Asn Leu
2485 2490 2495
Ile Thr Phe Val Cys Glu Thr Ala Thr Ser Ser Cys Pro Leu Ile Tyr
2500 2505 2510
Leu Asp Gly Tyr Thr Ser Pro Gly Phe Lys Met Leu Glu Ala Tyr Asn
2515 2520 2525
Leu Thr Glu Lys Asn Phe Ala Ser Val Gln Gly Val Ser Leu Glu Ser
2530 2535 2540
Gly Ser Phe Pro Ser Tyr Ser Ala Tyr Arg Ile Gln Lys Asn Ala Phe
2545 2550 2555 2560
Val Asn Gln Pro Thr Ala Asp Leu His Pro Asn Gly Leu Pro Pro Ser
2565 2570 2575
Tyr Thr Ile Ile Leu Leu Phe Arg Leu Leu Pro Glu Thr Pro Ser Asp
2580 2585 2590
Pro Phe Ala Ile Trp Gln Ile Thr Asp Arg Asp Tyr Lys Pro Gln Val
2595 2600 2605
Gly Val Ile Ala Asp Pro Ser Ser Lys Thr Leu Ser Phe Phe Asn Lys
2610 2615 2620
Asp Thr Arg Gly Glu Val Gln Thr Val Thr Phe Asp Thr Glu Glu Val
2625 2630 2635 2640
Lys Thr Leu Phe Tyr Gly Ser Phe His Lys Val His Ile Val Val Thr
2645 2650 2655
Ser Lys Ser Val Lys Ile Tyr Ile Asp Cys Tyr Glu Ile Ile Glu Lys
2660 2665 2670
Asp Ile Lys Glu Ala Gly Asn Ile Thr Thr Asp Gly Tyr Glu Ile Leu
2675 2680 2685
Gly Lys Leu Leu Lys Gly Glu Arg Lys Ser Ala Ala Phe Gln Ile Gln
2690 2695 2700
Ser Phe Asp Ile Val Cys Ser Pro Val Trp Thr Ser Arg Asp Arg Cys
2705 2710 2715 2720
Cys Asp Ile Pro Ser Arg Arg Asp Glu Gly Lys Cys Pro Ala Phe Pro
2725 2730 2735
Asn Ser Cys Thr Cys Thr Gln Asp Ser Val Gly Pro Pro Gly Pro Pro
2740 2745 2750
Gly Pro Ala Gly Gly Pro Gly Ala Lys Gly Pro Arg Gly Glu Arg Gly
2755 2760 2765
Ile Ser Gly Ala Ile Gly Pro Pro Gly Pro Arg Gly Asp Ile Gly Pro
2770 2775 2780
Pro Gly Pro Gln Gly Pro Pro Gly Pro Gln Gly Pro Asn Gly Leu Ser
2785 2790 2795 2800
Ile Pro Gly Glu Gln Gly Arg Gln Gly Met Lys Gly Asp Ala Gly Glu
2805 2810 2815
Pro Gly Leu Pro Gly Arg Thr Gly Thr Pro Gly Leu Pro Gly Pro Pro
2820 2825 2830
Gly Pro Met Gly Pro Pro Gly Asp Arg Gly Phe Thr Gly Lys Asp Ser
2835 2840 2845
Ala Met Gly Pro Arg Gly Pro Pro Gly Arg Pro Gly Ser Pro Gly Ser
2850 2855 2860

```
Pro Gly Val Thr Gly Pro Ser Gly Lys Pro Gly Lys Pro Gly Asp His
2865                2870                2875                2880
Gly Arg Pro Gly Pro Ser Gly Leu Lys Gly Glu Lys Gly Asp Arg Gly
                    2885                2890                2895
Asp Ile Ala Ser Gln Asn Met Met Arg Ala Val Ala Arg Gln Val Cys
            2900                2905                2910
Glu Gln Leu Ile Ser Gly Gln Met Asn Arg Phe Asn Gln Met Leu Asn
        2915                2920                2925
Gln Ile Pro Asn Asp Tyr Gln Ser Ser Arg Asn Gln Pro Gly Pro Pro
    2930                2935                2940
Gly Pro Pro Gly Pro Pro Gly Ser Ala Gly Ala Arg Gly Glu Pro Gly
2945                2950                2955                2960
Pro Gly Gly Arg Pro Gly Phe Pro Gly Thr Pro Gly Met Gln Gly Pro
                    2965                2970                2975
Pro Gly Glu Arg Gly Leu Pro Gly Glu Lys Gly Glu Arg Gly Thr Gly
            2980                2985                2990
Ser Ser Gly Pro Arg Gly Leu Pro Gly Pro Pro Gly Pro Gln Gly Glu
        2995                3000                3005
Ser Arg Thr Gly Pro Pro Gly Ser Thr Gly Ser Arg Gly Pro Pro Gly
    3010                3015                3020
Pro Pro Gly Arg Pro Gly Asn Ser Gly Ile Gln Gly Pro Pro Gly Pro
3025                3030                3035                3040
Pro Gly Tyr Cys Asp Ser Ser Gln Cys Ala Ser Ile Pro Tyr Asn Gly
                    3045                3050                3055
Gln Ser Tyr Pro Gly Ser Gly
            3060
```

<210> 258
<211> 1717
<212> DNA
<213> Homo sapiens

<400> 258

```
gtggattctt gtccatagtg catctgcttt aagaattaac gaaagcagtg tcaagacagt      60
aaggattcaa accatttgcc aaaaatgagt ctaagtgcat ttactctctt cctggcattg     120
attggtggta ccagtggcca gtactatgat tatgattttc ccctatcaat ttatgggcaa     180
tcatcaccaa actgtgcacc agaatgtaac tgccctgaaa gctacccaag tgccatgtac     240
tgtgatgagc tgaaattgaa aagtgtacca atggtgcctc ctggaatcaa gtatctttac     300
cttaggaata accagattga ccatattgat gaaaaggcct ttgagaatgt aactgatctg     360
cagtggctca ttctagatca caaccttcta gaaaactcca agataaaagg gagagttttc     420
tctaaattga aacaactgaa gaagctgcat ataaaccaca acaacctgac agagtctgtg     480
ggcccacttc ccaaatctct ggaggatctg cagcttactc ataacaagat cacaaagctg     540
ggctcttttg aaggattggt aaacctgacc ttcatccatc tccagcacaa tcggctgaaa     600
gaggatgctg tttcagctgc ttttaaaggt cttaaatcac tcgaatacct tgacttgagc     660
ttcaatcaga tagccagact gccttctggt ctccctgtct ctcttctaac tctctactta     720
gacaacaata agatcagcaa catccctgat gagtatttca agcgttttaa tgcattgcag     780
tatctgcgtt tatctcacaa cgaactggct gatagtggaa tacctggaaa ttctttcaat     840
gtgtcatccc tggttgagct ggatctgtcc tataacaagc ttaaaaacat accaactgtc     900
aatgaaaacc ttgaaaacta ttacctggag gtcaatcaac ttgagaagtt tgacataaag     960
agcttctgca agatcctggg gccattatcc tactccaaga tcaagcattt gcgtttggat    1020
ggcaatcgca tctcagaaac cagtcttcca ccggatatgt atgaatgtct acgtgttgct    1080
aacgaagtca ctcttaatta atatctgtat cctggaacaa tattttatgg ttatgttttt    1140
ctgtgtgtca gttttcatag tatccatatt ttattactgt ttattacttc catgaatttt    1200
aaaatctgag ggaaatgttt tgtaaacatt tatttttttt aaagaaaaga tgaaaggcag    1260
gcctatttca tcacaagaac acacacatat acacgaatag acatcaaact caatgcttta    1320
tttgtaaatt tagtgttttt ttatttctac tgtcaaatga tgtgcaaaac cttttactgg    1380
ttgcatggaa atcagccaag ttttataatc cttaaatctt aatgttcctc aaagcttgga    1440
ttaaatacat atggatgtta ctctcttgca ccaaattatc ttgatacatt caaatttgtc    1500
tggtaaaaaa ataggtggta gatattgagg ccaagaatat tgcaaaatac atgaagcttc    1560
atgcacttaa agaagtattt ttagaataag aatttgcata cttacctagt gaaacttttc    1620
tagaattatt tttcactcta agtcatgtat gtttctcttt gattatttgc atgttatgtt    1680
```

taataagcta ctagcaaaat aaaacatagc aaatggc 1717

<210> 259
<211> 338
<212> PRT
<213> Homo sapiens

<400> 259

```
Met Ser Leu Ser Ala Phe Thr Leu Phe Leu Ala Leu Ile Gly Gly Thr
 1               5                  10                  15
Ser Gly Gln Tyr Tyr Asp Tyr Asp Phe Pro Leu Ser Ile Tyr Gly Gln
            20                  25                  30
Ser Ser Pro Asn Cys Ala Pro Glu Cys Asn Cys Pro Glu Ser Tyr Pro
        35                  40                  45
Ser Ala Met Tyr Cys Asp Glu Leu Lys Leu Lys Ser Val Pro Met Val
    50                  55                  60
Pro Pro Gly Ile Lys Tyr Leu Tyr Leu Arg Asn Asn Gln Ile Asp His
65                  70                  75                  80
Ile Asp Glu Lys Ala Phe Glu Asn Val Thr Asp Leu Gln Trp Leu Ile
                85                  90                  95
Leu Asp His Asn Leu Leu Glu Asn Ser Lys Ile Lys Gly Arg Val Phe
            100                 105                 110
Ser Lys Leu Lys Gln Leu Lys Lys Leu His Ile Asn His Asn Asn Leu
        115                 120                 125
Thr Glu Ser Val Gly Pro Leu Pro Lys Ser Leu Glu Asp Leu Gln Leu
    130                 135                 140
Thr His Asn Lys Ile Thr Lys Leu Gly Ser Phe Glu Gly Leu Val Asn
145                 150                 155                 160
Leu Thr Phe Ile His Leu Gln His Asn Arg Leu Lys Glu Asp Ala Val
                165                 170                 175
Ser Ala Ala Phe Lys Gly Leu Lys Ser Leu Glu Tyr Leu Asp Leu Ser
            180                 185                 190
Phe Asn Gln Ile Ala Arg Leu Pro Ser Gly Leu Pro Val Ser Leu Leu
        195                 200                 205
Thr Leu Tyr Leu Asp Asn Asn Lys Ile Ser Asn Ile Pro Asp Glu Tyr
    210                 215                 220
Phe Lys Arg Phe Asn Ala Leu Gln Tyr Leu Arg Leu Ser His Asn Glu
225                 230                 235                 240
Leu Ala Asp Ser Gly Ile Pro Gly Asn Ser Phe Asn Val Ser Ser Leu
                245                 250                 255
Val Glu Leu Asp Leu Ser Tyr Asn Lys Leu Lys Asn Ile Pro Thr Val
            260                 265                 270
Asn Glu Asn Leu Glu Asn Tyr Tyr Leu Glu Val Asn Gln Leu Glu Lys
        275                 280                 285
Phe Asp Ile Lys Ser Phe Cys Lys Ile Leu Gly Pro Leu Ser Tyr Ser
    290                 295                 300
Lys Ile Lys His Leu Arg Leu Asp Gly Asn Arg Ile Ser Glu Thr Ser
305                 310                 315                 320
Leu Pro Pro Asp Met Tyr Glu Cys Leu Arg Val Ala Asn Glu Val Thr
                325                 330                 335
Leu Asn
```

<210> 260
<211> 6728
<212> DNA
<213> Homo sapiens

<400> 260

```
agcagacggg agtttctcct cggggtcgga gcaggaggca cgcggagtgt gaggccacgc      60
atgagcggac gctaaccccc tccccagcca caaagagtct acatgtctag ggtctagaca     120
```

tgttcagctt tgtggacctc cggctcctgc tcctcttagc ggccaccgcc ctcctgacgc 180
acggccaaga ggaaggccaa gtcgagggcc aagacgaaga catcccacca atcacctgcg 240
tacagaacgg cctcaggtac catgaccgag acgtgtggaa acccgagccc tgccggatct 300
gcgtctgcga caacggcaag gtgttgtgcg atgacgtgat ctgtgacgag accaagaact 360
gccccggcgc cgaagtcccc gagggcgagt gctgtcccgt ctgccccgac ggctcagagt 420
cacccaccga ccaagaaacc accggcgtcg agggacccaa gggagacact ggcccccgag 480
gcccaagggg acccgcaggc ccccctggcc gagatggcat ccctggacag cctggacttc 540
ccggaccccc cggacccccc ggacctcccg gacccctgg cctcggagga aactttgctc 600
cccagctgtc ttatggctat gatgagaaat caaccggagg aatttccgtg cctggcccca 660
tgggtccctc tggtcctcgt ggtctccctg gccccctgg tgcacctggt ccccaaggct 720
tccaaggtcc ccctggtgag cctggcgagc ctggagcttc aggtcccatg ggtccccgag 780
gtcccccagg tccccctgga aagaatggag atgatgggga agctggaaaa cctggtcgtc 840
ctggtgagcg tgggcctcct gggcctcagg gtgctcgagg attgcccgga acagctggcc 900
tccctggaat gaagggacac agaggtttca gtggtttgga tggtgccaag ggagatgctg 960
gtcctgctgg tcctaagggt gagcctggca gccctggtga aaatggagct cctggtcaga 1020
tgggcccccg tggcctgcct ggtgagagag gtcgccctgg agcccctggc cctgctggtg 1080
ctcgtggaaa tgatggtgct actggtgctg ccgggccccc tggtcccacc ggccccgctg 1140
gtcctcctgg cttccctggt gctgttggtg ctaagggtga agctggtccc caagggcccc 1200
gaggctctga aggtccccag ggtgtgcgtg gtgagcctgg ccccctggc cctgctggtg 1260
ctgctggccc tgctggaaac cctggtgctg atggacagcc tggtgctaaa ggtgccaatg 1320
gtgctcctgg tattgctggt gctcctggct tccctggtgc ccgaggcccc tctggacccc 1380
agggccccgg cggccctcct ggtcccaagg gtaacagcgg tgaacctggt gctcctggca 1440
gcaaaggaga cactggtgct aagggagagc ctggccctgt tggtgttcaa ggacccccctg 1500
gccctgctgg agaggaagga aagcgaggag ctcgaggtga acccggaccc actggcctgc 1560
ccggaccccc tggcgagcgt ggtggacctg gtagccgtgg tttccctggc gcagatggtg 1620
ttgctggtcc caagggtccc gctggtgaac gtggttctcc tggccccgct ggccccaaag 1680
gatctcctgg tgaagctggt cgtcccggtg aagctggtct gcctggtgcc aagggtctga 1740
ctggaagccc tggcagccct ggtcctgatg gcaaaactgg ccccccctggt cccgccggtc 1800
aagatggtcg ccccggaccc ccaggcccac ctggtgcccg tggtcaggct ggtgtgatgg 1860
gattccctgg acctaaaggt gctgctggag agcccggcaa ggctggagag cgaggtgttc 1920
ccggaccccc tggcgctgtc ggtcctgctg gcaaagatgg agaggctgga gctcagggac 1980
cccctggccc tgctggtccc gctggcgaga gaggtgaaca aggccctgct ggctcccccg 2040
gattccaggg tctccctggt cctgctggtc ctccaggtga agcaggcaaa cctggtgaac 2100
agggtgttcc tggagacctt ggcgcccctg gcccctctgg agcaagaggc gagagaggtt 2160
tccctggcga gcgtggtgtg caaggtcccc ctggtcctgc tggaccccga ggggccaacg 2220
gtgctcccgg caacgatggt gctaagggtg atgctggtgc ccctggagct cccggtagcc 2280
agggcgcccc tggccttcag ggaatgcctg gtgaacgtgg tgcagctggt cttccagggc 2340
ctaagggtga cagaggtgat gctggtccca aaggtgctga tggctctcct ggcaaagatg 2400
gcgtccgtgg tctgaccggc cccattggtc ctcctggccc tgctggtgcc cctggtgaca 2460
agggtgaaag tggtcccagc ggccctgctg gtcccactgg agctcgtggt gcccccggag 2520
accgtggtga gcctggtccc cccggccctg ctggctttgc tggcccccct ggtgctgacg 2580
gccaacctgg tgctaaaggc gaacctggtg atgctggtgc caaaggcgat gctggtcccc 2640
ctgggcctgc cggacccgct ggacccccctg gccccattgg taatgttggt gctcctggag 2700
ccaaaggtgc tcgcggcagc gctggtcccc ctggtgctac tggtttccct ggtgctgctg 2760
gccgagtcgg tcctcctggc ccctctggaa atgctggacc ccctggccct cctggtcctg 2820
ctggcaaaga aggcggcaaa ggtccccgtg gtgagactgg ccctgctgga cgtcctggtg 2880
aagttggtcc ccctggtccc cctggccctg ctggcgagaa aggatcccct ggtgctgatg 2940
gtcctgctgg tgctcctggt actcccgggc ctcaaggtat tgctggacag cgtggtgtgg 3000
tcggcctgcc tggtcagaga ggagagagag gcttccctgg tcttcctggc ccctctggtg 3060
aacctggcaa acaaggtccc tctggagcaa gtggtgaacg tggtcccccc ggtcccatgg 3120
gcccccctgg attggctgga ccccctggtg aatctggacg tgaggggget cctgctgccg 3180
aaggttcccc tggacgagac ggttctcctg gcgccaaggg tgaccgtggt gagaccggcc 3240
ccgctggacc ccctggtgct cctggtgctc ctggtgcccc tggccccgtt ggccctgctg 3300
gcaagagtgg tgatcgtggt gagactggtc ctgctggtcc cgccggtccc gtcggccccg 3360
tcggcgcccg tggccccgcc ggaccccaag gccccgtgg tgacaagggt gagacaggcg 3420
aacagggcga cagaggcata aagggtcacc gtggcttctc tggcctccag ggtccccctg 3480
gccctcctgg ctctcctggt gaacaaggtc cctctggagc ctctggtcct gctggtcccc 3540
gaggtccccc tggctctgct ggtgctcctg gcaaagatgg actcaacggt ctccctggcc 3600
ccattgggcc ccctggtcct cgcggtcgca ctggtgatgc tggtcctgtt ggtccccccg 3660
gccctcctgg acctcctggt ccccctggtc ctcccagcgc tggtttcgac ttcagcttcc 3720
tgccccagcc acctcaagag aaggctcacg atggtggccg ctactaccgg gctgatgatg 3780

ccaatgtggt tcgtgaccgt gacctcgagg tggacaccac cctcaagagc ctgagccagc 3840
agatcgagaa catccggagc ccagagggaa gccgcaagaa ccccgcccgc acctgccgtg 3900
acctcaagat gtgccactct gactggaaga gtggagagta ctggattgac cccaaccaag 3960
gctgcaacct ggatgccatc aaagtcttct gcaacatgga gactggtgag acctgcgtgt 4020
accccactca gcccagtgtg gcccagaaga actggtacat cagcaagaac cccaaggaca 4080
agaggcatgt ctggttcggc gagagcatga ccgatggatt ccagttcgag tatggcggcc 4140
agggctccga ccctgccgat gtggccatcc agctgacctt cctgcgcctg atgtccaccg 4200
aggcctccca gaacatcacc taccactgca agaacagcgt ggcctacatg gaccagcaga 4260
ctggcaacct caagaaggcc ctgctcctca agggctccaa cgagatcgag atccgcgccg 4320
agggcaacag ccgcttcacc tacagcgtca ctgtcgatgg ctgcacgagt cacaccggag 4380
cctggggcaa gacagtgatt gaatacaaaa ccaccaagtc ctcccgcctg cccatcatcg 4440
atgtggcccc cttggacgtt ggtgccccag accaggaatt cggcttcgac gttggccctg 4500
tctgcttcct gtaaactccc tccatcccaa cctggctccc tcccacccaa ccaactttcc 4560
ccccaacccg gaaacagaca agcaacccaa actgaacccc cccaaaagcc aaaaaatggg 4620
agacaatttc acatggactt tggaaaatat ttttttcctt tgcattcatc tctcaaactt 4680
agtttttatc tttgaccaac cgaacatgac caaaaaccaa aagtgcattc aaccttacca 4740
aaaaaaaaaa aaaaaaaaaa agaataaata aataagtttt taaaaaagga agcttggtcc 4800
acttgcttga agacccatgc gggggtaagt ccctttctgc ccgttgggtt atgaaacccc 4860
aatgctgccc tttctgctcc tttctccaca ccccccttgg cctcccctcc actccttccc 4920
aaatctgtct ccccagaaga cacaggaaac aatgtattgt ctgcccagca atcaaaggca 4980
atgctcaaac acccaagtgg cccccaccct cagcccgctc ctgcccgccc agcaccccca 5040
ggccctgggg acctggggtt ctcagactgc caaagaagcc ttgccatctg gcgctcccat 5100
ggctcttgca acatctcccc ttcgtttttg agggggtcat gccgggggag ccaccagccc 5160
ctcactgggt tcggaggaga gtcaggaagg gccacgacaa agcagaaaca tcggatttgg 5220
ggaacgcgtg tcatcccttg tgccgcaggc tgggcgggag agactgttct gttctgttcc 5280
ttgtgtaact gtgttgctga aagactacct cgttcttgtc ttgatgtgtc accggggcaa 5340
ctgcctgggg gcggggatgg gggcagggtg gaagcggctc cccatttta taccaaaggt 5400
gctacatcta tgtgatgggt ggggtgggga gggaatcact ggtgctatag aaattgagat 5460
gccccccag gccagcaaat gttccttttt gttcaaagtc tatttttatt ccttgatatt 5520
ttttctttct ttttttttt ttttgtggat ggggacttgt gaatttttct aaaggtgcta 5580
tttaacatgg gaggagagcg tgtgcgctcc agcccagccc gctgctcact ttccaccctc 5640
tctccacctg cctctggctt ctcaggcctc tgctctccga cctctctcct ctgaaaccct 5700
cctccacagc tgcagcccat cctcccggct ccctcctagt ctgtcctgcg tcctctgtcc 5760
ccgggtttca gagacaactt cccaaagcac aaagcagttt ttccctaggg gtgggaggaa 5820
gcaaaagact ctgtacctat tttgtatgtg tataataatt tgagatgttt ttaattattt 5880
tgattgctgg aataaagcat gtggaaatga cccaaacata atccgcagtg gcctcctaat 5940
ttccttcttt ggagttgggg gaggggtaga catggggaag gggccttggg gtgatgggct 6000
tgccttccat tcctgccctt tccctcccca ctattctctt ctagatccct ccataacccc 6060
actccccttt ctctcaccct tcttataccg caaacctttc tacttcctct ttcattttct 6120
attcttgcaa tttccttgca ccttttccaa atcctcttct cccctgcaat accatacagg 6180
caatccacgt gcacaacaca cacacacact cttcacatct ggggttgtcc aaacctcata 6240
cccactcccc ttcaagccca tccactctcc acccccctgga tgccctgcac ttggtggcgg 6300
tgggatgctc atggatactg ggagggtgag gggagtggaa cccgtgagga ggacctgggg 6360
gcctctcctt gaactgacat gaagggtcat ctggcctctg ctcccttctc acccacgctg 6420
acctcctgcc gaaggagcaa cgcaacagga gaggggtctg ctgagcctgg cgagggtctg 6480
ggagggacca ggaggaaggc gtgctccctg ctcgctgtcc tggccctggg ggagtgaggg 6540
agacagacac ctgggagagc tgtggggaag gcactcgcac cgtgctcttg ggaaggaagg 6600
agacctggcc ctgctcacca cggactgggt gcctcgacct cctgaatccc cagaacacaa 6660
ccccccctggg ctggggtggt ctggggaacc atcgtgcccc cgcctcccgc ctactccttt 6720
ttaagctt 6728

<210> 261
<211> 1464
<212> PRT
<213> Homo sapiens

<400> 261
Met Phe Ser Phe Val Asp Leu Arg Leu Leu Leu Leu Leu Ala Ala Thr
1 5 10 15

```
Ala Leu Leu Thr His Gly Gln Glu Glu Gly Gln Val Glu Gly Gln Asp
            20                  25                  30
Glu Asp Ile Pro Pro Ile Thr Cys Val Gln Asn Gly Leu Arg Tyr His
        35                  40                  45
Asp Arg Asp Val Trp Lys Pro Glu Pro Cys Arg Ile Cys Val Cys Asp
    50                  55                  60
Asn Gly Lys Val Leu Cys Asp Asp Val Ile Cys Asp Glu Thr Lys Asn
65                  70                  75                  80
Cys Pro Gly Ala Glu Val Pro Glu Gly Glu Cys Cys Pro Val Cys Pro
                85                  90                  95
Asp Gly Ser Glu Ser Pro Thr Asp Gln Glu Thr Thr Gly Val Glu Gly
            100                 105                 110
Pro Lys Gly Asp Thr Gly Pro Arg Gly Pro Arg Gly Pro Ala Gly Pro
        115                 120                 125
Pro Gly Arg Asp Gly Ile Pro Gly Gln Pro Gly Leu Pro Gly Pro Pro
    130                 135                 140
Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Leu Gly Gly Asn Phe Ala
145                 150                 155                 160
Pro Gln Leu Ser Tyr Gly Tyr Asp Glu Lys Ser Thr Gly Gly Ile Ser
                165                 170                 175
Val Pro Gly Pro Met Gly Pro Ser Gly Pro Arg Gly Leu Pro Gly Pro
            180                 185                 190
Pro Gly Ala Pro Gly Pro Gln Gly Phe Gln Gly Pro Pro Gly Glu Pro
        195                 200                 205
Gly Glu Pro Gly Ala Ser Gly Pro Met Gly Pro Arg Gly Pro Pro Gly
    210                 215                 220
Pro Pro Gly Lys Asn Gly Asp Asp Gly Glu Ala Gly Lys Pro Gly Arg
225                 230                 235                 240
Pro Gly Glu Arg Gly Pro Pro Gly Pro Gln Gly Ala Arg Gly Leu Pro
                245                 250                 255
Gly Thr Ala Gly Leu Pro Gly Met Lys Gly His Arg Gly Phe Ser Gly
            260                 265                 270
Leu Asp Gly Ala Lys Gly Asp Ala Gly Pro Ala Gly Pro Lys Gly Glu
        275                 280                 285
Pro Gly Ser Pro Gly Glu Asn Gly Ala Pro Gly Gln Met Gly Pro Arg
    290                 295                 300
Gly Leu Pro Gly Glu Arg Gly Arg Pro Gly Ala Pro Gly Pro Ala Gly
305                 310                 315                 320
Ala Arg Gly Asn Asp Gly Ala Thr Gly Ala Ala Gly Pro Pro Gly Pro
                325                 330                 335
Thr Gly Pro Ala Gly Pro Pro Gly Phe Pro Gly Ala Val Gly Ala Lys
            340                 345                 350
Gly Glu Ala Gly Pro Gln Gly Pro Arg Gly Ser Glu Gly Pro Gln Gly
        355                 360                 365
Val Arg Gly Glu Pro Gly Pro Pro Gly Pro Ala Gly Ala Ala Gly Pro
    370                 375                 380
Ala Gly Asn Pro Gly Ala Asp Gly Gln Pro Gly Ala Lys Gly Ala Asn
385                 390                 395                 400
Gly Ala Pro Gly Ile Ala Gly Ala Pro Gly Phe Pro Gly Ala Arg Gly
                405                 410                 415
Pro Ser Gly Pro Gln Gly Pro Gly Gly Pro Pro Gly Pro Lys Gly Asn
            420                 425                 430
Ser Gly Glu Pro Gly Ala Pro Gly Ser Lys Gly Asp Thr Gly Ala Lys
        435                 440                 445
Gly Glu Pro Gly Pro Val Gly Val Gln Gly Pro Pro Gly Pro Ala Gly
    450                 455                 460
Glu Glu Gly Lys Arg Gly Ala Arg Gly Glu Pro Gly Pro Thr Gly Leu
465                 470                 475                 480
Pro Gly Pro Pro Gly Glu Arg Gly Gly Pro Gly Ser Arg Gly Phe Pro
                485                 490                 495
Gly Ala Asp Gly Val Ala Gly Pro Lys Gly Pro Ala Gly Glu Arg Gly
```

```
            500                 505                 510
Ser Pro Gly Pro Ala Gly Pro Lys Gly Ser Pro Gly Glu Ala Gly Arg
        515                 520                 525
Pro Gly Glu Ala Gly Leu Pro Gly Ala Lys Gly Leu Thr Gly Ser Pro
    530                 535                 540
Gly Ser Pro Gly Pro Asp Gly Lys Thr Gly Pro Pro Gly Pro Ala Gly
545                 550                 555                 560
Gln Asp Gly Arg Pro Gly Pro Pro Gly Pro Pro Gly Ala Arg Gly Gln
                565                 570                 575
Ala Gly Val Met Gly Phe Pro Gly Pro Lys Gly Ala Ala Gly Glu Pro
            580                 585                 590
Gly Lys Ala Gly Glu Arg Gly Val Pro Gly Pro Pro Gly Ala Val Gly
        595                 600                 605
Pro Ala Gly Lys Asp Gly Glu Ala Gly Ala Gln Gly Pro Pro Gly Pro
    610                 615                 620
Ala Gly Pro Ala Gly Glu Arg Gly Glu Gln Gly Pro Ala Gly Ser Pro
625                 630                 635                 640
Gly Phe Gln Gly Leu Pro Gly Pro Ala Gly Pro Pro Gly Glu Ala Gly
                645                 650                 655
Lys Pro Gly Glu Gln Gly Val Pro Gly Asp Leu Gly Ala Pro Gly Pro
            660                 665                 670
Ser Gly Ala Arg Gly Glu Arg Gly Phe Pro Gly Glu Arg Gly Val Gln
        675                 680                 685
Gly Pro Pro Gly Pro Ala Gly Pro Arg Gly Ala Asn Gly Ala Pro Gly
    690                 695                 700
Asn Asp Gly Ala Lys Gly Asp Ala Gly Ala Pro Gly Ala Pro Gly Ser
705                 710                 715                 720
Gln Gly Ala Pro Gly Leu Gln Gly Met Pro Gly Glu Arg Gly Ala Ala
                725                 730                 735
Gly Leu Pro Gly Pro Lys Gly Asp Arg Gly Asp Ala Gly Pro Lys Gly
            740                 745                 750
Ala Asp Gly Ser Pro Gly Lys Asp Gly Val Arg Gly Leu Thr Gly Pro
        755                 760                 765
Ile Gly Pro Pro Gly Pro Ala Gly Ala Pro Gly Asp Lys Gly Glu Ser
    770                 775                 780
Gly Pro Ser Gly Pro Ala Gly Pro Thr Gly Ala Arg Gly Ala Pro Gly
785                 790                 795                 800
Asp Arg Gly Glu Pro Gly Pro Pro Gly Pro Ala Gly Phe Ala Gly Pro
                805                 810                 815
Pro Gly Ala Asp Gly Gln Pro Gly Ala Lys Gly Glu Pro Gly Asp Ala
            820                 825                 830
Gly Ala Lys Gly Asp Ala Gly Pro Pro Gly Pro Ala Gly Pro Ala Gly
        835                 840                 845
Pro Pro Gly Pro Ile Gly Asn Val Gly Ala Pro Gly Ala Lys Gly Ala
    850                 855                 860
Arg Gly Ser Ala Gly Pro Pro Gly Ala Thr Gly Phe Pro Gly Ala Ala
865                 870                 875                 880
Gly Arg Val Gly Pro Pro Gly Pro Ser Gly Asn Ala Gly Pro Pro Gly
                885                 890                 895
Pro Pro Gly Pro Ala Gly Lys Glu Gly Gly Lys Gly Pro Arg Gly Glu
            900                 905                 910
Thr Gly Pro Ala Gly Arg Pro Gly Glu Val Gly Pro Pro Gly Pro Pro
        915                 920                 925
Gly Pro Ala Gly Glu Lys Gly Ser Pro Gly Ala Asp Gly Pro Ala Gly
    930                 935                 940
Ala Pro Gly Thr Pro Gly Pro Gln Gly Ile Ala Gly Gln Arg Gly Val
945                 950                 955                 960
Val Gly Leu Pro Gly Gln Arg Gly Glu Arg Gly Phe Pro Gly Leu Pro
                965                 970                 975
Gly Pro Ser Gly Glu Pro Gly Lys Gln Gly Pro Ser Gly Ala Ser Gly
            980                 985                 990
```

```
Glu Arg Gly Pro Pro Gly Pro Met Gly Pro Pro Gly Leu Ala Gly Pro
        995                 1000                1005
Pro Gly Glu Ser Gly Arg Glu Gly Ala Pro Ala Ala Glu Gly Ser Pro
    1010                1015                1020
Gly Arg Asp Gly Ser Pro Gly Ala Lys Gly Asp Arg Gly Glu Thr Gly
1025                1030                1035                1040
Pro Ala Gly Pro Pro Gly Ala Pro Gly Ala Pro Gly Ala Pro Gly Pro
                1045                1050                1055
Val Gly Pro Ala Gly Lys Ser Gly Asp Arg Gly Glu Thr Gly Pro Ala
            1060                1065                1070
Gly Pro Ala Gly Pro Val Gly Pro Val Gly Ala Arg Gly Pro Ala Gly
        1075                1080                1085
Pro Gln Gly Pro Arg Gly Asp Lys Gly Glu Thr Gly Glu Gln Gly Asp
    1090                1095                1100
Arg Gly Ile Lys Gly His Arg Gly Phe Ser Gly Leu Gln Gly Pro Pro
1105                1110                1115                1120
Gly Pro Pro Gly Ser Pro Gly Glu Gln Gly Pro Ser Gly Ala Ser Gly
                1125                1130                1135
Pro Ala Gly Pro Arg Gly Pro Pro Gly Ser Ala Gly Ala Pro Gly Lys
            1140                1145                1150
Asp Gly Leu Asn Gly Leu Pro Gly Pro Ile Gly Pro Pro Gly Pro Arg
        1155                1160                1165
Gly Arg Thr Gly Asp Ala Gly Pro Val Gly Pro Pro Gly Pro Pro Gly
    1170                1175                1180
Pro Pro Gly Pro Pro Gly Pro Pro Ser Ala Gly Phe Asp Phe Ser Phe
1185                1190                1195                1200
Leu Pro Gln Pro Pro Gln Glu Lys Ala His Asp Gly Gly Arg Tyr Tyr
                1205                1210                1215
Arg Ala Asp Asp Ala Asn Val Val Arg Asp Arg Asp Leu Glu Val Asp
            1220                1225                1230
Thr Thr Leu Lys Ser Leu Ser Gln Gln Ile Glu Asn Ile Arg Ser Pro
        1235                1240                1245
Glu Gly Ser Arg Lys Asn Pro Ala Arg Thr Cys Arg Asp Leu Lys Met
    1250                1255                1260
Cys His Ser Asp Trp Lys Ser Gly Glu Tyr Trp Ile Asp Pro Asn Gln
1265                1270                1275                1280
Gly Cys Asn Leu Asp Ala Ile Lys Val Phe Cys Asn Met Glu Thr Gly
                1285                1290                1295
Glu Thr Cys Val Tyr Pro Thr Gln Pro Ser Val Ala Gln Lys Asn Trp
            1300                1305                1310
Tyr Ile Ser Lys Asn Pro Lys Asp Lys Arg His Val Trp Phe Gly Glu
        1315                1320                1325
Ser Met Thr Asp Gly Phe Gln Phe Glu Tyr Gly Gly Gln Gly Ser Asp
    1330                1335                1340
Pro Ala Asp Val Ala Ile Gln Leu Thr Phe Leu Arg Leu Met Ser Thr
1345                1350                1355                1360
Glu Ala Ser Gln Asn Ile Thr Tyr His Cys Lys Asn Ser Val Ala Tyr
                1365                1370                1375
Met Asp Gln Gln Thr Gly Asn Leu Lys Lys Ala Leu Leu Leu Lys Gly
            1380                1385                1390
Ser Asn Glu Ile Glu Ile Arg Ala Glu Gly Asn Ser Arg Phe Thr Tyr
        1395                1400                1405
Ser Val Thr Val Asp Gly Cys Thr Ser His Thr Gly Ala Trp Gly Lys
    1410                1415                1420
Thr Val Ile Glu Tyr Lys Thr Thr Lys Ser Ser Arg Leu Pro Ile Ile
1425                1430                1435                1440
Asp Val Ala Pro Leu Asp Val Gly Ala Pro Asp Gln Glu Phe Gly Phe
                1445                1450                1455
Asp Val Gly Pro Val Cys Phe Leu
            1460
```

<210> 262
<211> 2574
<212> DNA
<213> Homo sapiens

<400> 262
cctgtttaga cacatggaca acaatcccag cgctacaagg cacacagtcc gcttcttcgt 60
cctcagggtt gccagcgctt cctggaagtc ctgaagctct cgcagtgcag tgagttcatg 120
caccttcttg ccaagcctca gtctttggga tctggggagg ccgcctggtt ttcctccctc 180
cttctgcacg tctgctgggg tctcttcctc tccaggcctt gccgtccccc tggcctctct 240
tcccagctca cacatgaaga tgcacttgca aagggctctg gtggtcctgg ccctgctgaa 300
ctttgccacg gtcagcctct ctctgtccac ttgcaccacc ttggacttcg gccacatcaa 360
gaagaagagg gtggaagcca ttaggggaca gatcttgagc aagctcaggc tcaccagccc 420
ccctgagcca acggtgatga cccacgtccc ctatcaggtc ctggcccttt acaacagcac 480
ccgggagctg ctggaggaga tgcatgggga gagggaggaa ggctgcaccc aggaaaacac 540
cgagtcggaa tactatgcca aagaaatcca taaattcgac atgatccagg ggctggcgga 600
gcacaacgaa ctggctgtct gccctaaagg aattacctcc aaggttttcc gcttcaatgt 660
gtcctcagtg gagaaaaata gaaccaacct attccgagca gaattccggg tcttgcgggt 720
gcccaacccc agctctaagc ggaatgagca gaggatcgag ctcttccaga tccttcggcc 780
agatgagcac attgccaaac agcgctatat cggtggcaag aatctgccca cacggggcac 840
tgccgagtgg ctgtcctttg atgtcactga cactgtgcgt gagtggctgt tgagaagaga 900
gtccaactta ggtctagaaa tcagcattca ctgtccatgt cacacctttc agcccaatgg 960
agatatcctg gaaaacattc acgaggtgat ggaaatcaaa ttcaaaggcg tggacaatga 1020
ggatgaccat ggccgtggag atctggggcg cctcaagaag cagaaggatc accacaaccc 1080
tcatctaatc ctcatgatga ttcccccaca ccggctcgac aacccgggcc agggggtca 1140
gaggaagaag cgggctttgg acaccaatta ctgcttccgc aacttggagg agaactgctg 1200
tgtgcgcccc ctctacattg acttccgaca ggatctgggc tggaagtggg tccatgaacc 1260
taagggctac tatgccaact tctgctcagg cccttgccca tacctccgca gtgcagacac 1320
aacccacagc acggtgctgg gactgtacaa cactctgaac cctgaagcat ctgcctcgcc 1380
ttgctgcgtg ccccaggacc tggagccccc gaccatcctg tactatgttg ggaggacccc 1440
caaagtggag cagctctcca acatggtggt gaagtcttgt aaatgtagct gagaccccac 1500
gtgcgacaga gagaggggag agagaaccac cactgcctga ctgcccgctc ctcgggaaac 1560
acacaagcaa caaacctcac tgagaggcct ggagcccaca accttcggct ccgggcaaat 1620
ggctgagatg gaggtttcct tttggaacat ttctttcttg ctggctctga gaatcacggt 1680
ggtaaagaaa gtgtgggttt ggttagagga aggctgaact cttcagaaca cacagacttt 1740
ctgtgacgca gacagagggg atggggatag aggaaaggga tggtaagttg agatgttgtg 1800
tggcaatggg atttgggcta ccctaaaggg agaaggaagg gcagagaatg gctgggtcag 1860
ggccagactg gaagacactt cagatctgag gttggatttg ctcattgctg taccacatct 1920
gctctaggga atctggatta tgttatacaa ggcaagcatt tttttttta aagacaggtt 1980
acgaagacaa agtcccagaa ttgtatctca tactgtctgg gattaagggc aaatctatta 2040
cttttgcaaa ctgtcctcta catcaattaa catcgtgggt cactacaggg agaaaatcca 2100
ggtcatgcag ttcctggccc atcaactgta ttgggccttt tggatatgct gaacgcagaa 2160
gaaagggtgg aaatcaaccc tctcctgtct gccctctggg tccctcctct cacctctccc 2220
tcgatcatat ttccccttgg acacttggtt agacgccttc caggtcagga tgcacatttc 2280
tggattgtgg ttccatgcag ccttggggca ttatgggtct tcccccactt cccctccaag 2340
accctgtgtt catttggtgt tcctggaagc aggtgctaca acatgtgagg cattcgggga 2400
agctgcacat gtgccacaca gtgacttggc cccagacgca tagactgagg tataaagaca 2460
agtatgaata ttactctcaa aatctttgta taaataaata tttttggggc atcctggatg 2520
atttcatctt ctggaatatt gtttctagaa cagtaaaagc cttattctaa ggtg 2574

<210> 263
<211> 412
<212> PRT
<213> Homo sapiens

<400> 263
Met Lys Met His Leu Gln Arg Ala Leu Val Val Leu Ala Leu Leu Asn
1 5 10 15
Phe Ala Thr Val Ser Leu Ser Leu Ser Thr Cys Thr Thr Leu Asp Phe
20 25 30
Gly His Ile Lys Lys Lys Arg Val Glu Ala Ile Arg Gly Gln Ile Leu

```
        35                  40                  45
Ser Lys Leu Arg Leu Thr Ser Pro Pro Glu Pro Thr Val Met Thr His
    50                  55                  60
Val Pro Tyr Gln Val Leu Ala Leu Tyr Asn Ser Thr Arg Glu Leu Leu
65                  70                  75                  80
Glu Glu Met His Gly Glu Arg Glu Glu Gly Cys Thr Gln Glu Asn Thr
                85                  90                  95
Glu Ser Glu Tyr Tyr Ala Lys Glu Ile His Lys Phe Asp Met Ile Gln
            100                 105                 110
Gly Leu Ala Glu His Asn Glu Leu Ala Val Cys Pro Lys Gly Ile Thr
        115                 120                 125
Ser Lys Val Phe Arg Phe Asn Val Ser Ser Val Glu Lys Asn Arg Thr
    130                 135                 140
Asn Leu Phe Arg Ala Glu Phe Arg Val Leu Arg Val Pro Asn Pro Ser
145                 150                 155                 160
Ser Lys Arg Asn Glu Gln Arg Ile Glu Leu Phe Gln Ile Leu Arg Pro
                165                 170                 175
Asp Glu His Ile Ala Lys Gln Arg Tyr Ile Gly Gly Lys Asn Leu Pro
            180                 185                 190
Thr Arg Gly Thr Ala Glu Trp Leu Ser Phe Asp Val Thr Asp Thr Val
        195                 200                 205
Arg Glu Trp Leu Leu Arg Arg Glu Ser Asn Leu Gly Leu Glu Ile Ser
    210                 215                 220
Ile His Cys Pro Cys His Thr Phe Gln Pro Asn Gly Asp Ile Leu Glu
225                 230                 235                 240
Asn Ile His Glu Val Met Glu Ile Lys Phe Lys Gly Val Asp Asn Glu
                245                 250                 255
Asp Asp His Gly Arg Gly Asp Leu Gly Arg Leu Lys Lys Gln Lys Asp
            260                 265                 270
His His Asn Pro His Leu Ile Leu Met Met Ile Pro Pro His Arg Leu
        275                 280                 285
Asp Asn Pro Gly Gln Gly Gly Gln Arg Lys Lys Arg Ala Leu Asp Thr
    290                 295                 300
Asn Tyr Cys Phe Arg Asn Leu Glu Glu Asn Cys Cys Val Arg Pro Leu
305                 310                 315                 320
Tyr Ile Asp Phe Arg Gln Asp Leu Gly Trp Lys Trp Val His Glu Pro
                325                 330                 335
Lys Gly Tyr Tyr Ala Asn Phe Cys Ser Gly Pro Cys Pro Tyr Leu Arg
            340                 345                 350
Ser Ala Asp Thr Thr His Ser Thr Val Leu Gly Leu Tyr Asn Thr Leu
        355                 360                 365
Asn Pro Glu Ala Ser Ala Ser Pro Cys Cys Val Pro Gln Asp Leu Glu
    370                 375                 380
Pro Leu Thr Ile Leu Tyr Tyr Val Gly Arg Thr Pro Lys Val Glu Gln
385                 390                 395                 400
Leu Ser Asn Met Val Val Lys Ser Cys Lys Cys Ser
                405                 410
```

<210> 264
<211> 5086
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(5086)
<223> n = A,T,C or G

<400> 264

```
agcaccacgg cagcaggagg tttcggncta agttggaggt actggnccac gactgcatgc      60
ccgcgcccgc caggtgatac ctccgccggt gacccagggg ctctgcgaca caaggagtct     120
```

gcatgtctaa gtgctagaca tgctcagctt tgtggatacg cggactttgt tgctgcttgc 180
agtaacctta tgcctagcaa catgccaatc tttacaagag gaaactgtaa gaaagggccc 240
agccggagat agaggaccac gtggagaaag gggtccacca ggccccccag gcagagatgg 300
tgaagatggt cccacaggcc ctcctggtcc acctggtcct cctggccccc ctggtctcgg 360
tgggaacttt gctgctcagt atgatggaaa aggagttgga cttggccctg gaccaatggg 420
cttaatggga cctagaggcc cacctggtgc agctggagcc ccaggccctc aaggtttcca 480
aggacctgct ggtgagcctg gtgaacctgg tcaaactggt cctgcaggtg ctcgtggtcc 540
agctggccct cctggcaagg ctggtgaaga tggtcaccct ggaaaacccg gacgacctgg 600
tgagagagga gttgttggac cacagggtgc tcgtggtttc cctggaactc ctggacttcc 660
tggcttcaaa ggcattaggg gacacaatgg tctggatgga ttgaagggac agcccggtgc 720
tcctggtgtg aagggtgaac ctggtgcccc tggtgaaaat ggaactccag gtcaaacagg 780
agcccgtggg cttcctggtg agagaggacg tgttggtgcc cctggcccag ctggtgcccg 840
tggcagtgat ggaagtgtgg gtcccgtggg tcctgctggt cccattgggt ctgctggccc 900
tccaggcttc ccaggtgccc ctggccccaa gggtgaaatt ggagctgttg gtaacgctgg 960
tcctgctggt cccgccggtc cccgtggtga agtgggtctt ccaggcctct ccggccccgt 1020
tggacctcct ggtaatcctg gagcaaacgg ccttactggt gccaagggtg ctgctggcct 1080
tcccggcgtt gctggggctc ccggcctccc tggaccccgc ggtattcctg gccctgttgg 1140
tgctgccggt gctactggtg ccagaggact tgttggtgag cctggtccag ctggctccaa 1200
aggagagagc ggtaacaagg gtgagcccgg ctctgctggg ccccaaggtc ctcctggtcc 1260
cagtggtgaa gaaggaaaga gaggccctaa tggggaagct ggatctgccg gccctccagg 1320
acctcctggg ctgagaggta gtcctggttc tcgtggtctt cctggagctg atggcagagc 1380
tggcgtcatg ggccctcctg gtagtcgtgg tgcaagtggc cctgctggag tccgaggacc 1440
taatggagat gctggtcgcc ctggggagcc tggtctcatg ggacccagag gtcttcctgg 1500
ttcccctgga aatatcggcc ccgctggaaa agaaggtcct gtcggcctcc ctggcatcga 1560
cggcaggcct ggcccaattg gcccagctgg agcaagagga gagcctggca acattggatt 1620
ccctggaccc aaaggcccca ctggtgatcc tggcaaaaac ggtgataaag gtcatgctgg 1680
tcttgctggt gctcggggtg ctccaggtcc tgatggaaac aatggtgctc agggacctcc 1740
tggaccacag ggtgttcaag gtggaaaagg tgaacagggt cccgctggtc ctccaggctt 1800
ccagggtctg cctggcccct caggtcccgc tggtgaagtt ggcaaaccag gagaaagggg 1860
tctccatggt gagtttggtc tccctggtcc tgctggtcca agaggggaac gcggtccccc 1920
aggtgagagt ggtgctgccg gtcctactgg tcctattgga agccgaggtc cttctggacc 1980
cccagggcct gatggaaaca agggtgaacc tggtgtggtt ggtgctgtgg gcactgctgg 2040
tccatctggt cctagtggac tcccaggaga gaggggtgct gctggcatac ctggaggcaa 2100
gggagaaaag ggtgaacctg gtctcagagg tgaaattggt aaccctggca gagatggtgc 2160
tcgtggtgct catggtgctg taggtgcccc tggtcctgct ggagccacag gtgaccgggg 2220
cgaagctggg gctgctggtc ctgctggtcc tgctggtcct cggggaagcc ctggtgaacg 2280
tggcgaggtc ggtcctgctg gccccaacgg atttgctggt ccggctggtg ctgctggtca 2340
accgggtgct aaaggagaaa gaggagccaa agggcctaag ggtgaaaacg gtgttgttgg 2400
tcccacaggc cccgttggag ctgctggccc agctggtcca aatggtcccc ccggtcctgc 2460
tggaagtcgt ggtgatggag gccccccctgg tatgactggt ttccctggtg ctgctggacg 2520
gactggtccc ccaggaccct ctggtatttc tggccctcct ggtccccctg gtcctgctgg 2580
gaaagaaggg cttcgtggtc ctcgtggtga ccaaggtcca gttggccgaa ctggagaagt 2640
aggtgcagtt ggtcccccctg gcttcgctgg tgagaagggt ccctctggag aggctggtac 2700
tgctggacct cctggcactc caggtcctca gggtcttctt ggtgctcctg gtattctggg 2760
tctccctggc tcgagaggtg aacgtggtct acctggtgtt gctggtgctg tgggtgaacc 2820
tggtcctctt ggcattgccg gccctcctgg ggcccgtggt cctcctggtg ctgtgggtag 2880
tcctggagtc aacggtgctc ctggtgaagc tggtcgtgat ggcaaccctg ggaacgatgg 2940
tcccccaggt cgcgatggtc aacccggaca caagggagag cgcggttacc ctggcaatat 3000
tggtcccgtt ggtgctgcag gtgcacctgg tcctcatggc cccgtgggtc ctgctggcaa 3060
acatggaaac cgtggtgaaa ctggtccttc tggtcctgtt ggtcctgctg gtgctgttgg 3120
cccaagaggt cctagtggcc cacaaggcat tcgtggcgat aagggagagc ccggtgaaaa 3180
ggggcccaga ggtcttcctg gcttaaaggg acacaatgga ttgcaaggtc tgcctggtat 3240
cgctggtcac catggtgatc aaggtgctcc tggctccgtg ggtcctgctg gtcctagggg 3300
ccctgctggt ccttctggcc ctgctggaaa agatggtcgc actggacatc ctggtacggt 3360
tggacctgct ggcattcgag gccctcaggg tcaccaaggc cctgctggcc cccctggtcc 3420
ccctggccct cctggacctc caggtgtaag cggtggtggt tatgactttg gttacgatgg 3480
agacttctac agggctgacc agcctcgctc agcaccttct ctcagaccca aggactatga 3540
agttgatgct actctgaagt ctctcaacaa ccagattgag acccttctta ctcctgaagg 3600
ctctagaaag aacccagctc gcacatgccg tgacttgaga ctcagccacc cagagtggag 3660
cagtggttac tactggattg accctaacca aggatgcact atggatgcta tcaaagtata 3720
ctgtgatttc tctactggcg aaacctgtat ccgggcccaa cctgaaaaca tcccagccaa 3780

```
gaactggtat aggagctcca aggacaagaa acacgtctgg ctaggagaaa ctatcaatgc    3840
tggcagccag tttgaatata atgtagaagg agtgacttcc aaggaaatgg ctacccaact    3900
tgccttcatg cgcctgctgg ccaactatgc ctctcagaac atcacctacc actgcaagaa    3960
cagcattgca tacatggatg aggagactgg caacctgaaa aaggctgtca ttctacaggg    4020
ctctaatgat gttgaacttg ttgctgaggg caacagcagg ttcacttaca ctgttcttgt    4080
agatggctgc tctaaaaaga caaatgaatg gggaaagaca atcattgaat acaaaacaaa    4140
taagccatca cgcctgccct tccttgatat tgcacctttg gacatcggtg gtgctgacca    4200
tgaattcttt gtggacattg gcccagtctg tttcaaataa atgaactcaa tctaaattaa    4260
aaaagaaaga aatttgaaaa aactttctct ttgccatttc ttcttcttct tttttaactg    4320
aaagctgaat ccttccattt cttctgcaca tctacttgct taaattgtgg gcaaaagaga    4380
aaaagaagga ttgatcagag cattgtgcaa tacagtttca ttaactcctt cccccgctcc    4440
cccaaaaatt tgaatttttt tttcaacact cttacacctg ttatggaaaa tgtcaacctt    4500
tgtaagaaaa ccaaaataaa aattgaaaaa taaaaaccat aaacatttgc accacttgtg    4560
gcttttgaat atcttccaca gagggaagtt taaaacccaa acttccaaag gtttaaacta    4620
cctcaaaaca ctttcccatg agtgtgatcc acattgttag gtgctgacct agacagagat    4680
gaactgaggt ccttgttttg ttttgttcat aatacaaagg tgctaattaa tagtatttca    4740
gatacttgaa gaatgttgat ggtgctagaa gaatttgaga agaaatactc ctgtattgag    4800
ttgtatcgtg tggtgtattt tttaaaaaat ttgatttagc attcatattt tccatcttat    4860
tcccaattaa aagtatgcag attatttgcc caaagttgtc ctcttcttca gattcagcat    4920
ttgttctttg ccagtctcat tttcatcttc ttccatggtt ccacagaagc tttgtttctt    4980
gggcaagcag aaaaattaaa ttgtacctat tttgtatatg tgagatgttt aaataaattg    5040
tgaaaaaaat gaaataaagc atgtttggtt ttccaaaaga acatat                   5086
```

<210> 265
<211> 1366
<212> PRT
<213> Homo sapiens

<400> 265

```
Met Leu Ser Phe Val Asp Thr Arg Thr Leu Leu Leu Leu Ala Val Thr
 1               5                  10                  15
Leu Cys Leu Ala Thr Cys Gln Ser Leu Gln Glu Glu Thr Val Arg Lys
            20                  25                  30
Gly Pro Ala Gly Asp Arg Gly Pro Arg Gly Glu Arg Gly Pro Pro Gly
        35                  40                  45
Pro Pro Gly Arg Asp Gly Glu Asp Gly Pro Thr Gly Pro Pro Gly Pro
    50                  55                  60
Pro Gly Pro Pro Gly Pro Pro Gly Leu Gly Gly Asn Phe Ala Ala Gln
65                  70                  75                  80
Tyr Asp Gly Lys Gly Val Gly Leu Gly Pro Gly Pro Met Gly Leu Met
                85                  90                  95
Gly Pro Arg Gly Pro Pro Gly Ala Ala Gly Ala Pro Gly Pro Gln Gly
            100                 105                 110
Phe Gln Gly Pro Ala Gly Glu Pro Gly Glu Pro Gly Gln Thr Gly Pro
        115                 120                 125
Ala Gly Ala Arg Gly Pro Ala Gly Pro Pro Gly Lys Ala Gly Glu Asp
    130                 135                 140
Gly His Pro Gly Lys Pro Gly Arg Pro Gly Glu Arg Gly Val Val Gly
145                 150                 155                 160
Pro Gln Gly Ala Arg Gly Phe Pro Gly Thr Pro Gly Leu Pro Gly Phe
                165                 170                 175
Lys Gly Ile Arg Gly His Asn Gly Leu Asp Gly Leu Lys Gly Gln Pro
            180                 185                 190
Gly Ala Pro Gly Val Lys Gly Glu Pro Gly Ala Pro Gly Glu Asn Gly
        195                 200                 205
Thr Pro Gly Gln Thr Gly Ala Arg Gly Leu Pro Gly Glu Arg Gly Arg
    210                 215                 220
Val Gly Ala Pro Gly Pro Ala Gly Ala Arg Gly Ser Asp Gly Ser Val
225                 230                 235                 240
```

Gly Pro Val Gly Pro Ala Gly Pro Ile Gly Ser Ala Gly Pro Pro Gly
245 250 255
Phe Pro Gly Ala Pro Gly Pro Lys Gly Glu Ile Gly Ala Val Gly Asn
260 265 270
Ala Gly Pro Ala Gly Pro Ala Gly Pro Arg Gly Glu Val Gly Leu Pro
275 280 285
Gly Leu Ser Gly Pro Val Gly Pro Pro Gly Asn Pro Gly Ala Asn Gly
290 295 300
Leu Thr Gly Ala Lys Gly Ala Ala Gly Leu Pro Gly Val Ala Gly Ala
305 310 315 320
Pro Gly Leu Pro Gly Pro Arg Gly Ile Pro Gly Pro Val Gly Ala Ala
325 330 335
Gly Ala Thr Gly Ala Arg Gly Leu Val Gly Glu Pro Gly Pro Ala Gly
340 345 350
Ser Lys Gly Glu Ser Gly Asn Lys Gly Glu Pro Gly Ser Ala Gly Pro
355 360 365
Gln Gly Pro Pro Gly Pro Ser Gly Glu Glu Gly Lys Arg Gly Pro Asn
370 375 380
Gly Glu Ala Gly Ser Ala Gly Pro Pro Gly Pro Pro Gly Leu Arg Gly
385 390 395 400
Ser Pro Gly Ser Arg Gly Leu Pro Gly Ala Asp Gly Arg Ala Gly Val
405 410 415
Met Gly Pro Pro Gly Ser Arg Gly Ala Ser Gly Pro Ala Gly Val Arg
420 425 430
Gly Pro Asn Gly Asp Ala Gly Arg Pro Gly Glu Pro Gly Leu Met Gly
435 440 445
Pro Arg Gly Leu Pro Gly Ser Pro Gly Asn Ile Gly Pro Ala Gly Lys
450 455 460
Glu Gly Pro Val Gly Leu Pro Gly Ile Asp Gly Arg Pro Gly Pro Ile
465 470 475 480
Gly Pro Ala Gly Ala Arg Gly Glu Pro Gly Asn Ile Gly Phe Pro Gly
485 490 495
Pro Lys Gly Pro Thr Gly Asp Pro Gly Lys Asn Gly Asp Lys Gly His
500 505 510
Ala Gly Leu Ala Gly Ala Arg Gly Ala Pro Gly Pro Asp Gly Asn Asn
515 520 525
Gly Ala Gln Gly Pro Pro Gly Pro Gln Gly Val Gln Gly Gly Lys Gly
530 535 540
Glu Gln Gly Pro Ala Gly Pro Pro Gly Phe Gln Gly Leu Pro Gly Pro
545 550 555 560
Ser Gly Pro Ala Gly Glu Val Gly Lys Pro Gly Glu Arg Gly Leu His
565 570 575
Gly Glu Phe Gly Leu Pro Gly Pro Ala Gly Pro Arg Gly Glu Arg Gly
580 585 590
Pro Pro Gly Glu Ser Gly Ala Ala Gly Pro Thr Gly Pro Ile Gly Ser
595 600 605
Arg Gly Pro Ser Gly Pro Pro Gly Pro Asp Gly Asn Lys Gly Glu Pro
610 615 620
Gly Val Val Gly Ala Val Gly Thr Ala Gly Pro Ser Gly Pro Ser Gly
625 630 635 640
Leu Pro Gly Glu Arg Gly Ala Ala Gly Ile Pro Gly Gly Lys Gly Glu
645 650 655
Lys Gly Glu Pro Gly Leu Arg Gly Glu Ile Gly Asn Pro Gly Arg Asp
660 665 670
Gly Ala Arg Gly Ala His Gly Ala Val Gly Ala Pro Gly Pro Ala Gly
675 680 685
Ala Thr Gly Asp Arg Gly Glu Ala Gly Ala Ala Gly Pro Ala Gly Pro
690 695 700
Ala Gly Pro Arg Gly Ser Pro Gly Glu Arg Gly Glu Val Gly Pro Ala
705 710 715 720
Gly Pro Asn Gly Phe Ala Gly Pro Ala Gly Ala Ala Gly Gln Pro Gly

725 730 735
Ala Lys Gly Glu Arg Gly Ala Lys Gly Pro Lys Gly Glu Asn Gly Val
740 745 750
Val Gly Pro Thr Gly Pro Val Gly Ala Ala Gly Pro Ala Gly Pro Asn
755 760 765
Gly Pro Pro Gly Pro Ala Gly Ser Arg Gly Asp Gly Gly Pro Pro Gly
770 775 780
Met Thr Gly Phe Pro Gly Ala Ala Gly Arg Thr Gly Pro Pro Gly Pro
785 790 795 800
Ser Gly Ile Ser Gly Pro Pro Gly Pro Pro Gly Pro Ala Gly Lys Glu
805 810 815
Gly Leu Arg Gly Pro Arg Gly Asp Gln Gly Pro Val Gly Arg Thr Gly
820 825 830
Glu Val Gly Ala Val Gly Pro Pro Gly Phe Ala Gly Glu Lys Gly Pro
835 840 845
Ser Gly Glu Ala Gly Thr Ala Gly Pro Pro Gly Thr Pro Gly Pro Gln
850 855 860
Gly Leu Leu Gly Ala Pro Gly Ile Leu Gly Leu Pro Gly Ser Arg Gly
865 870 875 880
Glu Arg Gly Leu Pro Gly Val Ala Gly Ala Val Gly Glu Pro Gly Pro
885 890 895
Leu Gly Ile Ala Gly Pro Pro Gly Ala Arg Gly Pro Pro Gly Ala Val
900 905 910
Gly Ser Pro Gly Val Asn Gly Ala Pro Gly Glu Ala Gly Arg Asp Gly
915 920 925
Asn Pro Gly Asn Asp Gly Pro Pro Gly Arg Asp Gly Gln Pro Gly His
930 935 940
Lys Gly Glu Arg Gly Tyr Pro Gly Asn Ile Gly Pro Val Gly Ala Ala
945 950 955 960
Gly Ala Pro Gly Pro His Gly Pro Val Gly Pro Ala Gly Lys His Gly
965 970 975
Asn Arg Gly Glu Thr Gly Pro Ser Gly Pro Val Gly Pro Ala Gly Ala
980 985 990
Val Gly Pro Arg Gly Pro Ser Gly Pro Gln Gly Ile Arg Gly Asp Lys
995 1000 1005
Gly Glu Pro Gly Glu Lys Gly Pro Arg Gly Leu Pro Gly Leu Lys Gly
1010 1015 1020
His Asn Gly Leu Gln Gly Leu Pro Gly Ile Ala Gly His His Gly Asp
1025 1030 1035 1040
Gln Gly Ala Pro Gly Ser Val Gly Pro Ala Gly Pro Arg Gly Pro Ala
1045 1050 1055
Gly Pro Ser Gly Pro Ala Gly Lys Asp Gly Arg Thr Gly His Pro Gly
1060 1065 1070
Thr Val Gly Pro Ala Gly Ile Arg Gly Pro Gln Gly His Gln Gly Pro
1075 1080 1085
Ala Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly Val Ser
1090 1095 1100
Gly Gly Gly Tyr Asp Phe Gly Tyr Asp Gly Asp Phe Tyr Arg Ala Asp
1105 1110 1115 1120
Gln Pro Arg Ser Ala Pro Ser Leu Arg Pro Lys Asp Tyr Glu Val Asp
1125 1130 1135
Ala Thr Leu Lys Ser Leu Asn Asn Gln Ile Glu Thr Leu Leu Thr Pro
1140 1145 1150
Glu Gly Ser Arg Lys Asn Pro Ala Arg Thr Cys Arg Asp Leu Arg Leu
1155 1160 1165
Ser His Pro Glu Trp Ser Ser Gly Tyr Tyr Trp Ile Asp Pro Asn Gln
1170 1175 1180
Gly Cys Thr Met Asp Ala Ile Lys Val Tyr Cys Asp Phe Ser Thr Gly
1185 1190 1195 1200
Glu Thr Cys Ile Arg Ala Gln Pro Glu Asn Ile Pro Ala Lys Asn Trp
1205 1210 1215

```
Tyr Arg Ser Ser Lys Asp Lys Lys His Val Trp Leu Gly Glu Thr Ile
            1220                1225                1230
Asn Ala Gly Ser Gln Phe Glu Tyr Asn Val Glu Gly Val Thr Ser Lys
        1235                1240                1245
Glu Met Ala Thr Gln Leu Ala Phe Met Arg Leu Leu Ala Asn Tyr Ala
    1250                1255                1260
Ser Gln Asn Ile Thr Tyr His Cys Lys Asn Ser Ile Ala Tyr Met Asp
1265                1270                1275                1280
Glu Glu Thr Gly Asn Leu Lys Lys Ala Val Ile Leu Gln Gly Ser Asn
                1285                1290                1295
Asp Val Glu Leu Val Ala Glu Gly Asn Ser Arg Phe Thr Tyr Thr Val
            1300                1305                1310
Leu Val Asp Gly Cys Ser Lys Lys Thr Asn Glu Trp Gly Lys Thr Ile
        1315                1320                1325
Ile Glu Tyr Lys Thr Asn Lys Pro Ser Arg Leu Pro Phe Leu Asp Ile
    1330                1335                1340
Ala Pro Leu Asp Ile Gly Gly Ala Asp His Glu Phe Phe Val Asp Ile
1345                1350                1355                1360
Gly Pro Val Cys Phe Lys
                1365
```

<210> 266
<211> 2028
<212> DNA
<213> Homo sapiens

<400> 266

```
atggcatatg caaaagccct gaggctgcag tggagagagc cattgaaagg gaagggcaat      60
aaggagcggt tcaagggaga gtatcaactc acatgggcct tgaaggccac gcactgccta     120
gcagcaactc actggagccc ctcttgcccc ccgcaacagg tgtttgggga cctggaccag     180
gtgaggatga cctcggaggg ctccgactgc cgttgcaagt gcatcatgcg gcccctgagc     240
aaggacgcgt gtagccgagt gcgcagtggg cgggcacgcg tggaggactt ctacacggtg     300
gagactgtga gctcgggcac tgactgccgc tgctcctgta ccgcacctcc ctcctctctc     360
aacccctgtg agaacgagtg gaagatggag aaactcaaaa agcaggcgcc cgagctcctc     420
aagctgcagt ccatggtgga tctcctggag ggcaccctgt acagcatgga cttgatgaag     480
gtgcacgcct acgtccacaa ggtggcctcc cagatgaaca cactggaaga gagcatcaag     540
gccaacctga gccgggagaa tgaggtggtg aaggacagcg tgcgccacct cagtgagcag     600
ttgaggcact atgagaatca ctctgccatc atgctgggca tcaagaagga gctgtcccgc     660
ctgggcctcc agctgctgca gaaggatgcc gccgccgccc ctgccacccc tgccacgggc     720
actggtagca aggcccagga cacagctaga ggaaaaggca aggacatcag caagtatggc     780
agtgtgcaga aaagctttgc agacagaggc ctcccaaaac ctcccaagga gaagctgctt     840
caggtggaga agctgagaaa ggagagcggc aagggcagtt tcctccagcc cacagccaag     900
ccccgcgccc tggcccagca gcaggctgtg atccggggct tcacctacta caaggcaggc     960
aagcaggagg tgaccgaggc ggtggcagac aacaccctcc agggcacttc ctggctggag    1020
caactgccgc ccaaggtgga gggcaggtcc aactccgcag agcccaactc cgcagagcag    1080
gatgaggctg agcccaggtc ctccgagcga gtggacctgg cttctggcac ccccacttca    1140
atccctgcca ccaccaccac cgccaccacc accccaaccc ccaccaccag tctcctgccc    1200
accgagccac cttcaggtcc agaagtctcc agccaaggca gagaggcgag ctgtgagggc    1260
accctccggg ctgtggaccc ccctgtgagg caccacagct atgggcgcca cgagggagcc    1320
tggatgaagg accctgcagc tcgagacgac aggatctatg tcaccaacta ctactatgga    1380
aacagcctgg tggagttccg caacctggaa aacttcaagc aaggccgctg gagtaacatg    1440
tacaagctac cctacaactg gatcggcaca ggccacgtgg tgtaccaggg cgccttctac    1500
tacaaccgcg ccttcaccaa gaacatcatc aagtacgacc tacggcagcg cttcgtggcc    1560
tcctgggcgc tgctgcccga cgtggtatat gaggacacca caccttggaa gtggcgcgga    1620
cactcggaca ttgactttgc cgtggacgag agcggcctgt gggtcatcta ccccgccgtg    1680
gacgaccgcg atgaggccca gcccgaggtg atcgtcctga gtcgcttgga ccccggcgat    1740
ctctccgtgc accgggagac cacgtggaag acacggctgc ggcggaactc ctacgggaac    1800
tgcttcctgg tgtgcggcat cctgtatgcc gtggacacgt acaaccagca ggaaggccag    1860
gtcgcctacg ctttcgacac gcacacgggc accgacgcac gcccccagct gccgttcctc    1920
aacgagcacg cctacaccac ccagatcgac tacaacccca aggagcgggt gctgtacgcc    1980
tgggacaatg gccaccagct cacctacacc ctccacttcg tggtctga                 2028
```

<210> 267
<211> 675
<212> PRT
<213> Homo sapiens

<400> 267

```
Met Ala Tyr Ala Lys Ala Leu Arg Leu Gln Trp Arg Glu Pro Leu Lys
 1               5                  10                  15
Gly Lys Gly Asn Lys Glu Arg Phe Lys Gly Glu Tyr Gln Leu Thr Trp
            20                  25                  30
Ala Leu Lys Ala Thr His Cys Leu Ala Ala Thr His Trp Ser Pro Ser
        35                  40                  45
Cys Pro Pro Gln Gln Val Phe Gly Asp Leu Asp Gln Val Arg Met Thr
    50                  55                  60
Ser Glu Gly Ser Asp Cys Arg Cys Lys Cys Ile Met Arg Pro Leu Ser
65                  70                  75                  80
Lys Asp Ala Cys Ser Arg Val Arg Ser Gly Arg Ala Arg Val Glu Asp
                85                  90                  95
Phe Tyr Thr Val Glu Thr Val Ser Ser Gly Thr Asp Cys Arg Cys Ser
            100                 105                 110
Cys Thr Ala Pro Pro Ser Ser Leu Asn Pro Cys Glu Asn Glu Trp Lys
        115                 120                 125
Met Glu Lys Leu Lys Lys Gln Ala Pro Glu Leu Leu Lys Leu Gln Ser
    130                 135                 140
Met Val Asp Leu Leu Glu Gly Thr Leu Tyr Ser Met Asp Leu Met Lys
145                 150                 155                 160
Val His Ala Tyr Val His Lys Val Ala Ser Gln Met Asn Thr Leu Glu
                165                 170                 175
Glu Ser Ile Lys Ala Asn Leu Ser Arg Glu Asn Glu Val Val Lys Asp
            180                 185                 190
Ser Val Arg His Leu Ser Glu Gln Leu Arg His Tyr Glu Asn His Ser
        195                 200                 205
Ala Ile Met Leu Gly Ile Lys Lys Glu Leu Ser Arg Leu Gly Leu Gln
    210                 215                 220
Leu Leu Gln Lys Asp Ala Ala Ala Ala Pro Ala Thr Pro Ala Thr Gly
225                 230                 235                 240
Thr Gly Ser Lys Ala Gln Asp Thr Ala Arg Gly Lys Gly Lys Asp Ile
                245                 250                 255
Ser Lys Tyr Gly Ser Val Gln Lys Ser Phe Ala Asp Arg Gly Leu Pro
            260                 265                 270
Lys Pro Pro Lys Glu Lys Leu Leu Gln Val Glu Lys Leu Arg Lys Glu
        275                 280                 285
Ser Gly Lys Gly Ser Phe Leu Gln Pro Thr Ala Lys Pro Arg Ala Leu
    290                 295                 300
Ala Gln Gln Gln Ala Val Ile Arg Gly Phe Thr Tyr Tyr Lys Ala Gly
305                 310                 315                 320
Lys Gln Glu Val Thr Glu Ala Val Ala Asp Asn Thr Leu Gln Gly Thr
                325                 330                 335
Ser Trp Leu Glu Gln Leu Pro Pro Lys Val Glu Gly Arg Ser Asn Ser
            340                 345                 350
Ala Glu Pro Asn Ser Ala Glu Gln Asp Glu Ala Glu Pro Arg Ser Ser
        355                 360                 365
Glu Arg Val Asp Leu Ala Ser Gly Thr Pro Thr Ser Ile Pro Ala Thr
    370                 375                 380
Thr Thr Thr Ala Thr Thr Thr Pro Thr Pro Thr Thr Ser Leu Leu Pro
385                 390                 395                 400
Thr Glu Pro Pro Ser Gly Pro Glu Val Ser Ser Gln Gly Arg Glu Ala
                405                 410                 415
Ser Cys Glu Gly Thr Leu Arg Ala Val Asp Pro Pro Val Arg His His
            420                 425                 430
```

```
Ser Tyr Gly Arg His Glu Gly Ala Trp Met Lys Asp Pro Ala Ala Arg
        435                 440                 445
Asp Asp Arg Ile Tyr Val Thr Asn Tyr Tyr Tyr Gly Asn Ser Leu Val
    450                 455                 460
Glu Phe Arg Asn Leu Glu Asn Phe Lys Gln Gly Arg Trp Ser Asn Met
465                 470                 475                 480
Tyr Lys Leu Pro Tyr Asn Trp Ile Gly Thr Gly His Val Val Tyr Gln
                485                 490                 495
Gly Ala Phe Tyr Tyr Asn Arg Ala Phe Thr Lys Asn Ile Ile Lys Tyr
            500                 505                 510
Asp Leu Arg Gln Arg Phe Val Ala Ser Trp Ala Leu Leu Pro Asp Val
        515                 520                 525
Val Tyr Glu Asp Thr Thr Pro Trp Lys Trp Arg Gly His Ser Asp Ile
    530                 535                 540
Asp Phe Ala Val Asp Glu Ser Gly Leu Trp Val Ile Tyr Pro Ala Val
545                 550                 555                 560
Asp Asp Arg Asp Glu Ala Gln Pro Glu Val Ile Val Leu Ser Arg Leu
                565                 570                 575
Asp Pro Gly Asp Leu Ser Val His Arg Glu Thr Thr Trp Lys Thr Arg
            580                 585                 590
Leu Arg Arg Asn Ser Tyr Gly Asn Cys Phe Leu Val Cys Gly Ile Leu
        595                 600                 605
Tyr Ala Val Asp Thr Tyr Asn Gln Gln Glu Gly Gln Val Ala Tyr Ala
    610                 615                 620
Phe Asp Thr His Thr Gly Thr Asp Ala Arg Pro Gln Leu Pro Phe Leu
625                 630                 635                 640
Asn Glu His Ala Tyr Thr Thr Gln Ile Asp Tyr Asn Pro Lys Glu Arg
                645                 650                 655
Val Leu Tyr Ala Trp Asp Asn Gly His Gln Leu Thr Tyr Thr Leu His
            660                 665                 670
Phe Val Val
        675
```

<210> 268
<211> 1909
<212> DNA
<213> Homo sapiens

<400> 268

```
gacacctttt aaaatgcaga actaactgag gcatttcagt aactttgctt tcaaatcaat      60
aaagtcaaat gtatggaaac attttgtgcc ctactctcca taccctgtgt actcaaattc     120
tctactgtat gaattatgct ttaagtagaa ttcagtgcca aggagaactt ggtgaaataa     180
attattttaa ttttttttt atcctttaca aagccatgga ttttatttgg ttgatgtgtg     240
ctctgtacac aagccatttc aataggatgg agctgttaat tattttccaa agagtaatag     300
acatgcaaaa gtttcaataa aaactgggcc attaacaaat aaattaataa actaataagc     360
attccctttct aggtttttgc caaactgcct atccaataac aaatttgaga atcgttgaaa     420
aagctagtta tatttcagag aaatgatttt cattattgaa actgttctcc ctagcaggcc     480
attttccctt tttcctggga gtttagcaag tttaggagag aatagtcatg aaaagaaagg     540
gaagaaaggg gagaagggaa gaggttaaaa agtaagtgct cagacctatg aacgtaatcc     600
ctttgctaga aatatttaag agcagctcag cttggttgaa actgagtttt gtcatcttcc     660
atatttgcag gaaggtattt tctgacttgc aatgcagcta gatgtaaaat tttatttttat     720
catcctagaa agccttgact agaaaaatga ataaatattg agggtttcct gtccatatct     780
ggcttgcatg tgccagaaag cagagaatag aaaatgtaat ctccaacatc caagcatcga     840
aacccaaggg gtaggcaatt ctatgtaggt tttggacatg aagtttggtg catcttggtt     900
tatgctggct caactgctat taaacctctc tggcttatag tctcttcatt ctattagaca     960
agcacgtatc gaacacttgc ttcgcacaag gctctttagt taacaattta gcagctactg    1020
tttgtgttaa acacactttt caccaaatag gttctgaggc aaacgagagc aatgactatt    1080
taaagaaagg ctttcccagc atcacttaca catcccaaaa ctaaaaagat caactcttcc    1140
aactgagaaa agactcctgg ctttgaatgg aaacttacag cagagagtca caggccacgg    1200
caacaacaac gacaacaaca aacatttgga atattattct caactcacgt tttaataata    1260
catcttaatt atttttctag tagagaaact acaaatcagc ctcttcaaca tttatataca    1320
```

```
gtttaataag cctcttgcaa gttacttgtt ctctcacctg aggtattttt ttcctcccca    1380
ccttgcccct gttcctccct tcctcttctc cctttgcaag aggaaatatt taacatattt    1440
gggtccaact tcaataatgt aataattaat acattaaaag catttaactt cctttctaga    1500
aaaatgcaca ggctaaggca tagacaaaac aaagagaaat gctgagaaat ttgccactgg    1560
agacaagcaa tctgaataaa tatttgccaa aagttctttt tatgtcatat agtgtcagga    1620
tttgaaggag ctatttttt taatgttgca actagcaact catcttcgga agacacagcc    1680
aggagaatga agtagaagtg aaaggtttat aaatccattt gtaagcattt atcccatata    1740
ttttaaattc aagaaaaatt gtgtttatct ttagaatttt gtattcaata ctttatgtac    1800
tatgtgactc atgcttctgg ataaataaag caccaaatat gtatctgtaa ccacaatcac    1860
acatattata ttaaatatat atctatataa caaaaaaaaa aaaaaaaaa                1909
```

<210> 269
<211> 83
<212> PRT
<213> Homo sapiens

<400> 269

```
Met Tyr Gly Asn Ile Leu Cys Pro Thr Leu His Thr Leu Cys Thr Gln
 1               5                  10                  15
Ile Leu Tyr Cys Met Asn Tyr Ala Leu Ser Arg Ile Gln Cys Gln Gly
            20                  25                  30
Glu Leu Gly Glu Ile Asn Tyr Phe Asn Phe Phe Phe Ile Leu Tyr Lys
        35                  40                  45
Ala Met Asp Phe Ile Trp Leu Met Cys Ala Leu Tyr Thr Ser His Phe
    50                  55                  60
Asn Arg Met Glu Leu Leu Ile Ile Phe Gln Arg Val Ile Asp Met Gln
65                  70                  75                  80
Lys Phe Gln
```

<210> 270
<211> 1720
<212> DNA
<213> Homo sapiens

<400> 270

```
gactgcagat gaaattagta actggtgggg tcgtggggtg tgaatggtgg gcgggagcag      60
ctatgtcagt tggtgtgttt ctgcttatgt tagggtaatt gggcacggcc tttgtgtaac     120
tggtgaatat ctctgaacct gggcatgaaa cagagagatg tcctaactct gggtgagagg     180
aatcctcatt tttctctgcc ctctcactgt ggcatcctaa gaaaaaagtt ttgggttcct     240
gcagcatgaa ggagagctct gctcccagaa tttgggagct ccagatttct tccagggtgt     300
ggaggcatca atatatcagt ctgggaaagg ggttcctggg ccactccagg agctgagttg     360
ggtggaaggt gctgagagtg tgggtggggg ccacttctga gcacccatgt ggcacccact     420
gctggtccct gtttgtggct gggcactcag gaaaatgttt ttggtgctaa gagtaaaaag     480
ccaaccaaca aacacatctc ttttttctgt ctattcactg gaaagtaaaa gcagtctggg     540
cgcaggctgg ggacccagat ggaattcaaa cttatgcctg ctctcaaggt gctcacggtt     600
gctgataaac agctggataa aatgaagagt ctatgagtga gggatgcaga gccagggaag     660
gctggtggag tgatgccacc agcacagggg tatgagtttg cagctgccaa ggggccaagg     720
gatgagctgg ggccctcctt cccaatggca tctccccctg gtctggaact gaagacactg     780
agcaatggtc cccaagcccc aaggagatca gctcccctgg gcccagtggc cccaaccagg     840
gagggtgtgg agaatgcctg cttctcctca gaggagcatg agacccattt ccagaaccct     900
gggaacacga gactgggcag ctcacccagt ccccctgggg gtgtctcctc actgccccga     960
tcccagcggg atgatctgtc ccttcattca gaggaggggc cagccctgga gcccgtgagc    1020
cgcccggtgg attatggctt tgtttccgcc ctcgttttcc tggtgagtgg gattcttctg    1080
gtggtgacag catacgccat cccccgtgag gctcgagtca atccggacac agtgacagcg    1140
cgggagatgg aacgactgga gatgtactac gcccgcctag gctcccacct ggacaggtgc    1200
atcatcgcag gcctcgggct gctcacggtg ggcggcatgc tcttgtcggt gctgctcatg    1260
gtctccctgt gcaagggcga gctgtaccgc cggaggacct tcgtccccgg caagggctcc    1320
aggaagacct acggctccat taacctgcgc atgagacagc tcaatgggga tgggggccag    1380
gccctggtgg agaatgaagt tgtccaggtc tcagagacta gccacaccct ccagaggtct    1440
taagaactag cccaccttat ctggctgctt tagctccagt gctacaaggt ccacccccctg    1500
```

```
ctcccgccca cctgacccct gccaaggccc tggggtttta aactgagctc acatagggcc    1560
ttgtggaaga agtactgggt gctggaggga gagctcgggg cccagcccat gccccacacg    1620
ggcaagcagc ccactgatct gttttgtagc tgaggttttg catacggttt tgtttggagg    1680
atggcttctg ctgctaaaaa tacaaaagtt tggaaaccgc                          1720
```

<210> 271
<211> 256
<212> PRT
<213> Homo sapiens

<400> 271

```
Met Pro Pro Ala Gln Gly Tyr Glu Phe Ala Ala Ala Lys Gly Pro Arg
 1               5                  10                  15
Asp Glu Leu Gly Pro Ser Phe Pro Met Ala Ser Pro Pro Gly Leu Glu
            20                  25                  30
Leu Lys Thr Leu Ser Asn Gly Pro Gln Ala Pro Arg Arg Ser Ala Pro
        35                  40                  45
Leu Gly Pro Val Ala Pro Thr Arg Glu Gly Val Glu Asn Ala Cys Phe
    50                  55                  60
Ser Ser Glu Glu His Glu Thr His Phe Gln Asn Pro Gly Asn Thr Arg
65                  70                  75                  80
Leu Gly Ser Ser Pro Ser Pro Pro Gly Gly Val Ser Ser Leu Pro Arg
                85                  90                  95
Ser Gln Arg Asp Asp Leu Ser Leu His Ser Glu Glu Gly Pro Ala Leu
            100                 105                 110
Glu Pro Val Ser Arg Pro Val Asp Tyr Gly Phe Val Ser Ala Leu Val
        115                 120                 125
Phe Leu Val Ser Gly Ile Leu Leu Val Val Thr Ala Tyr Ala Ile Pro
    130                 135                 140
Arg Glu Ala Arg Val Asn Pro Asp Thr Val Thr Ala Arg Glu Met Glu
145                 150                 155                 160
Arg Leu Glu Met Tyr Tyr Ala Arg Leu Gly Ser His Leu Asp Arg Cys
                165                 170                 175
Ile Ile Ala Gly Leu Gly Leu Leu Thr Val Gly Gly Met Leu Leu Ser
            180                 185                 190
Val Leu Leu Met Val Ser Leu Cys Lys Gly Glu Leu Tyr Arg Arg Arg
        195                 200                 205
Thr Phe Val Pro Gly Lys Gly Ser Arg Lys Thr Tyr Gly Ser Ile Asn
    210                 215                 220
Leu Arg Met Arg Gln Leu Asn Gly Asp Gly Gly Gln Ala Leu Val Glu
225                 230                 235                 240
Asn Glu Val Val Gln Val Ser Glu Thr Ser His Thr Leu Gln Arg Ser
                245                 250                 255
```

<210> 272
<211> 1111
<212> DNA
<213> Homo sapiens

<400> 272

```
ccgcgcgctc gccccgccgc tcctgctgca gccccaggcc cctcgccgcc gccaccatgg      60
acgccatcaa gaagaagatg cagatgctga agctcgacaa ggagaacgcc ttggatcgag     120
ctgagcaggc ggaggccgac aagaaggcgg cggaagacag gagcaagcag ctggaagatg     180
agctggtgtc actgcaaaag aaactcaagg gcaccgaaga tgaactggac aaatactctg     240
aggctctcaa agatgcccag gagaagctgg agctggcaga gaaaaaggcc accgatgctg     300
aagccgacgt agcttctctg aacagacgca tccagctggt tgaggaagag ttggatcgtg     360
cccaggagcg tctggcaaca gctttgcaga agctggagga agctgagaag gcagcagatg     420
agagtgagag aggcatgaaa gtcattgaga gtcgagccca aaaagatgaa gaaaaaatgg     480
aaattcagga gatccaactg aaagaggcca agcacattgc tgaagatgcc gaccgcaaat     540
acgaagaggt ggcccgtaag ctggtcatca ttgagagcga cctggaacgt gcagaggagc     600
gggctgagct ctcagaaggc aaatgtgccg agcttgaaga agaattgaaa actgtgacga     660
```

```
acaacttgaa gtcactggag gctcaggctg agaagtactc gcagaaggaa gacagatatg     720
aggaagagat caaggtcctt tccgacaagc tgaaggaggc tgagactcgg gctgagtttg     780
cggagaggtc agtaactaaa ttggagaaaa gcattgatga cttagaagac gagctgtacg     840
ctcagaaact gaagtacaaa gccatcagcg aggagctgga ccacgctctc aacgatatga     900
cttccatata agtttctttg cttcacttct cccaagactc cctcgtcgag ctggatgtcc     960
cacctctctg agctctgcat ttgtctattc tccagctgac cctggttctc tctcttagca    1020
tcctgcctta gagccaggca cacactgtgc tttctattgt acagaagctc ttcgtttcag    1080
tgtcaaataa acactgtgta agctaaaaaa a                                    1111
```

<210> 273
<211> 284
<212> PRT
<213> Homo sapiens

<400> 273

```
Met Asp Ala Ile Lys Lys Lys Met Gln Met Leu Lys Leu Asp Lys Glu
 1               5                  10                  15
Asn Ala Leu Asp Arg Ala Glu Gln Ala Glu Ala Asp Lys Lys Ala Ala
            20                  25                  30
Glu Asp Arg Ser Lys Gln Leu Glu Asp Glu Leu Val Ser Leu Gln Lys
        35                  40                  45
Lys Leu Lys Gly Thr Glu Asp Glu Leu Asp Lys Tyr Ser Glu Ala Leu
    50                  55                  60
Lys Asp Ala Gln Glu Lys Leu Glu Leu Ala Glu Lys Lys Ala Thr Asp
65                  70                  75                  80
Ala Glu Ala Asp Val Ala Ser Leu Asn Arg Arg Ile Gln Leu Val Glu
                85                  90                  95
Glu Glu Leu Asp Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys
            100                 105                 110
Leu Glu Glu Ala Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys
        115                 120                 125
Val Ile Glu Ser Arg Ala Gln Lys Asp Glu Glu Lys Met Glu Ile Gln
    130                 135                 140
Glu Ile Gln Leu Lys Glu Ala Lys His Ile Ala Glu Asp Ala Asp Arg
145                 150                 155                 160
Lys Tyr Glu Glu Val Ala Arg Lys Leu Val Ile Ile Glu Ser Asp Leu
                165                 170                 175
Glu Arg Ala Glu Glu Arg Ala Glu Leu Ser Glu Gly Lys Cys Ala Glu
            180                 185                 190
Leu Glu Glu Glu Leu Lys Thr Val Thr Asn Asn Leu Lys Ser Leu Glu
        195                 200                 205
Ala Gln Ala Glu Lys Tyr Ser Gln Lys Glu Asp Arg Tyr Glu Glu Glu
    210                 215                 220
Ile Lys Val Leu Ser Asp Lys Leu Lys Glu Ala Glu Thr Arg Ala Glu
225                 230                 235                 240
Phe Ala Glu Arg Ser Val Thr Lys Leu Glu Lys Ser Ile Asp Asp Leu
                245                 250                 255
Glu Asp Glu Leu Tyr Ala Gln Lys Leu Lys Tyr Lys Ala Ile Ser Glu
            260                 265                 270
Glu Leu Asp His Ala Leu Asn Asp Met Thr Ser Ile
        275                 280
```

<210> 274
<211> 2032
<212> DNA
<213> Homo sapiens

<400> 274

```
caccccgcag cccggcctcg gcctccgccg cttgttgtcg cgccccgccc gcgagcccgc      60
cccgcacgtc ccccgccggc ggccaccatg agcacaggcc tgcggtacaa gagcaagctg     120
gcgaccccag aggacaagca ggacattgac aagcagtacg tgggcttcgc cacactgccc     180
```

```
aaccaggtgc accgcaagtc ggtgaagaaa ggctttgact tcacactcat ggtggctggt     240
gagtcaggcc tggggaagtc cacactggtc cacagcctct tcctgacaga cttgtacaag     300
gaccggaagc tgctcagtgc tgaggagcgc atcagccaga cggtagagat tctaaaacac     360
acggtggaca ttgaggagaa gggagtcaag ctgaagctca ccatcgtgga cacgccggga     420
ttcggggacg ctgtcaacaa caccgagtgc tggaagccca tcaccgacta tgtggaccag     480
cagtttgagc agtacttccg tgatgagagc ggcctcaacc gaaagaacat ccaagacaac     540
cgagtgcact gctgcctata cttcatctcc cccttcgggc atgggctgcg gccagtggat     600
gtgggtttca tgaaggcatt gcatgagaag gtcaacatcg tgcctctcat cgccaaagct     660
gactgtcttg tccccagtga gatccggaag ctgaaggagc ggatccggga ggagattgac     720
aagtttggga tccatgtata ccagttccct gagtgtgact cggacgagga tgaggacttc     780
aagcagcagg accgggaact gaaggagagc gcgcccttcg ccgttatagg cagcaacacg     840
gtggtggagg ccaaggggca gcgggtccgg ggccgactgt acccctgggg gatcgtggag     900
gtggagaacc aggcgcattg cgacttcgtg aagctgcgca acatgctcat ccgcacgcat     960
atgcacgacc tcaaggacgt gacgtgcgac gtgcactacg agaactaccg cgcgcactgc    1020
atccagcaga tgaccagcaa actgacccag gacagccgca tggagagccc catcccgatc    1080
ctgccgctgc ccacccccgga cgccgagact gagaagctta tcaggatgaa ggatgaggaa    1140
ctgaggcgca tgcaggagat gctgcagagg atgaagcagc agatgcagga ccagtgacgc    1200
tcgccgcgga cacaccgtcc gtctccggga cgccctcgca cccctggaca ccagaccgga    1260
ctgttcccga cccggagacg cggggccaca gcccccagct gaccctaatt tattctcagc    1320
accacccccct cccaggtcat tgtgtctgtt tccgaggggc ctggaccgta gcccccgccc    1380
agctggccct ctctgacctt gggggatcag gagcgaagtt gggcgggact tcagagatcc    1440
gcctcccttg cccttccccc gcccccggac ggtcacagca cccaaaccgc aggccctgct    1500
ctggcaggca ggcaaagcta ggcagaagag gattcccagg atcctgggtc tgttccctgc    1560
cccagtgctg cagaacggac ttgggagccc tcctttgcct gctcccgcgg gtcacccagc    1620
gagtgctgag accccatttt ctgtcgaggc gggccgagtc ttcccttatc cccagacgcc    1680
tagcgggcag ggttgggctg aatcaaatgg gagccctcca gacataagga ggccagaggc    1740
tgcaaggagc ggggtcgtga ccgcttacac cccttctcca cagcccggcc cgacctggag    1800
ggcccccggg gcactgggcg gtgagccacc tcctggcaac tctcggtgcc gtcccctgcc    1860
ctcgctcgag gcctcttctc cccagcaccg ctgtggtgtg ccgggatcct gagcctaggc    1920
ctcccgatgt tcccacccgc atgatccctt cccgccacac gatgctccgt tttcttccgt    1980
tgtgaatgcc gcgtcctgtc ctggtgacag gagaacaatg ttggtgaacg tc             2032
```

<210> 275
<211> 369
<212> PRT
<213> Homo sapiens

<400> 275

```
Met Ser Thr Gly Leu Arg Tyr Lys Ser Lys Leu Ala Thr Pro Glu Asp
 1               5                  10                  15
Lys Gln Asp Ile Asp Lys Gln Tyr Val Gly Phe Ala Thr Leu Pro Asn
            20                  25                  30
Gln Val His Arg Lys Ser Val Lys Lys Gly Phe Asp Phe Thr Leu Met
        35                  40                  45
Val Ala Gly Glu Ser Gly Leu Gly Lys Ser Thr Leu Val His Ser Leu
    50                  55                  60
Phe Leu Thr Asp Leu Tyr Lys Asp Arg Lys Leu Leu Ser Ala Glu Glu
65                  70                  75                  80
Arg Ile Ser Gln Thr Val Glu Ile Leu Lys His Thr Val Asp Ile Glu
                85                  90                  95
Glu Lys Gly Val Lys Leu Lys Leu Thr Ile Val Asp Thr Pro Gly Phe
            100                 105                 110
Gly Asp Ala Val Asn Asn Thr Glu Cys Trp Lys Pro Ile Thr Asp Tyr
        115                 120                 125
Val Asp Gln Gln Phe Glu Gln Tyr Phe Arg Asp Glu Ser Gly Leu Asn
    130                 135                 140
Arg Lys Asn Ile Gln Asp Asn Arg Val His Cys Cys Leu Tyr Phe Ile
145                 150                 155                 160
Ser Pro Phe Gly His Gly Leu Arg Pro Val Asp Val Gly Phe Met Lys
                165                 170                 175
Ala Leu His Glu Lys Val Asn Ile Val Pro Leu Ile Ala Lys Ala Asp
```

```
            180                 185                 190
Cys Leu Val Pro Ser Glu Ile Arg Lys Leu Lys Glu Arg Ile Arg Glu
        195                 200                 205
Glu Ile Asp Lys Phe Gly Ile His Val Tyr Gln Phe Pro Glu Cys Asp
    210                 215                 220
Ser Asp Glu Asp Glu Asp Phe Lys Gln Gln Asp Arg Glu Leu Lys Glu
225                 230                 235                 240
Ser Ala Pro Phe Ala Val Ile Gly Ser Asn Thr Val Val Glu Ala Lys
                245                 250                 255
Gly Gln Arg Val Arg Gly Arg Leu Tyr Pro Trp Gly Ile Val Glu Val
            260                 265                 270
Glu Asn Gln Ala His Cys Asp Phe Val Lys Leu Arg Asn Met Leu Ile
        275                 280                 285
Arg Thr His Met His Asp Leu Lys Asp Val Thr Cys Asp Val His Tyr
    290                 295                 300
Glu Asn Tyr Arg Ala His Cys Ile Gln Gln Met Thr Ser Lys Leu Thr
305                 310                 315                 320
Gln Asp Ser Arg Met Glu Ser Pro Ile Pro Ile Leu Pro Leu Pro Thr
                325                 330                 335
Pro Asp Ala Glu Thr Glu Lys Leu Ile Arg Met Lys Asp Glu Glu Leu
            340                 345                 350
Arg Arg Met Gln Glu Met Leu Gln Arg Met Lys Gln Gln Met Gln Asp
        355                 360                 365
Gln
```

<210> 276
<211> 1344
<212> DNA
<213> Homo sapiens

<400> 276

```
tgcagactga tatggattca ccactgctaa cacctcctgg ttggaactac aggaatagaa      60
ctggaaaggg aaaaaaggca gcattcacca catcccaatc ctgaatccaa gagtctaaga     120
tagtccccca ctcctatctc aggcttagag gattagatta atctcctgga gggaagactc     180
ttccttgaaa catttttttt tatctgcctg tagctattgg gataattcgg gaaatccaca     240
gggacagttc aagtcatctt tgtcctctac tttctgttgc actctcagcc ttgttctctt     300
tttagaaact gcatggtaac tattatatag ctaaagaaga gcattctgac ctctgccctg     360
ggacttcctg gatcctcctc ttcttataaa tacaagggca gagctggtat cccggggagc     420
caggaagcag tgagcccagg agtcctcggc cagccctgcc tgcccaccag gaggatgaag     480
gtctccgtgg ctgccctctc ctgcctcatg cttgttgctg tccttggatc ccaggcccag     540
ttcacaaatg atgcagagac agagttaatg atgtcaaagc ttccactgga aaatccagta     600
gttctgaaca gctttcactt tgctgctgac tgctgcacct cctacatctc acaaagcatc     660
ccgtgttcac tcatgaaaag ttattttgaa acgagcagcg agtgctccaa gccaggtgtc     720
atattcctca ccaagaaggg gcggcaagtc tgtgccaaac ccagtggtcc gggagttcag     780
gattgcatga aaaagctgaa gccctactca atataataat aaagagacaa aagaggccag     840
ccacccacct ccaacacctc ctgagcctct gaagctccca ccaggccagc tctcctccca     900
caacagcttc ccacagcatg aagatctccg tggctgccat tcccttcttc ctcctcatca     960
ccatcgccct agggaccaag actgaatcct cctcacgggg accttaccac ccctcagagt    1020
gctgcttcac ctacactacc tacaagatcc cgcgtcagcg gattatggat tactatgaga    1080
ccaacagcca gtgctccaag cccggaattg tcttcatcac caaaaggggc cattccgtct    1140
gtaccaaccc cagtgacaag tgggtccagg actatatcaa ggacatgaag gagaactgag    1200
tgacccagaa ggggtggcga aggcacagct cagagacata aagagaagat gccaaggccc    1260
cctcctccac ccaccgctaa ctctcagccc cagtcaccct cttggagctt ccctgctttg    1320
aattaaagac cactcatgct cttc                                           1344
```

<210> 277
<211> 93
<212> PRT
<213> Homo sapiens

<400> 277

```
Met Lys Ile Ser Val Ala Ala Ile Pro Phe Phe Leu Leu Ile Thr Ile
 1               5                  10                  15
Ala Leu Gly Thr Lys Thr Glu Ser Ser Ser Arg Gly Pro Tyr His Pro
            20                  25                  30
Ser Glu Cys Cys Phe Thr Tyr Thr Thr Tyr Lys Ile Pro Arg Gln Arg
        35                  40                  45
Ile Met Asp Tyr Tyr Glu Thr Asn Ser Gln Cys Ser Lys Pro Gly Ile
    50                  55                  60
Val Phe Ile Thr Lys Arg Gly His Ser Val Cys Thr Asn Pro Ser Asp
65                  70                  75                  80
Lys Trp Val Gln Asp Tyr Ile Lys Asp Met Lys Glu Asn
                85                  90
```

<210> 278
<211> 1344
<212> DNA
<213> Homo sapiens

<400> 278

```
tgcagactga tatggattca ccactgctaa cacctcctgg ttggaactac aggaatagaa      60
ctggaaaggg aaaaaaggca gcattcacca catcccaatc ctgaatccaa gagtctaaga     120
tagtccccca ctcctatctc aggcttagag gattagatta atctcctgga gggaagactc     180
ttccttgaaa catttttttt tatctgcctg tagctattgg gataattcgg gaaatccaca     240
gggacagttc aagtcatctt tgtcctctac tttctgttgc actctcagcc ttgttctctt     300
tttagaaact gcatggtaac tattatatag ctaaagaaga gcattctgac ctctgccctg     360
ggacttcctg gatcctcctc ttcttataaa tacaagggca gagctggtat cccggggagc     420
caggaagcag tgagcccagg agtcctcggc cagccctgcc tgcccaccag gaggatgaag     480
gtctccgtgg ctgccctctc ctgcctcatg cttgttgctg tccttggatc ccaggcccag     540
ttcacaaatg atgcagagac agagttaatg atgtcaaagc ttccactgga aaatccagta     600
gttctgaaca gctttcactt tgctgctgac tgctgcacct cctacatctc acaaagcatc     660
ccgtgttcac tcatgaaaag ttattttgaa acgagcagcg agtgctccaa gccaggtgtc     720
atattcctca ccaagaaggg gcggcaagtc tgtgccaaac ccagtggtcc gggagttcag     780
gattgcatga aaaagctgaa gccctactca atataataat aaagagacaa aagaggccag     840
ccacccacct ccaacacctc ctgagcctct gaagctccca ccaggccagc tctcctccca     900
caacagcttc ccacagcatg aagatctccg tggctgccat tcccttcttc ctcctcatca     960
ccatcgccct agggaccaag actgaatcct cctcacgggg accttaccac ccctcagagt    1020
gctgcttcac ctacactacc tacaagatcc cgcgtcagcg gattatggat tactatgaga    1080
ccaacagcca gtgctccaag cccggaattg tcttcatcac caaaaggggc cattccgtct    1140
gtaccaaccc cagtgacaag tgggtccagg actatatcaa ggacatgaag gagaactgag    1200
tgacccagaa ggggtggcga aggcacagct cagagacata aagagaagat gccaaggccc    1260
cctcctccac ccaccgctaa ctctcagccc cagtcaccct cttggagctt ccctgctttg    1320
aattaaagac cactcatgct cttc                                           1344
```

<210> 279
<211> 93
<212> PRT
<213> Homo sapiens

<400> 279

```
Met Lys Ile Ser Val Ala Ala Ile Pro Phe Phe Leu Leu Ile Thr Ile
 1               5                  10                  15
Ala Leu Gly Thr Lys Thr Glu Ser Ser Ser Arg Gly Pro Tyr His Pro
            20                  25                  30
Ser Glu Cys Cys Phe Thr Tyr Thr Thr Tyr Lys Ile Pro Arg Gln Arg
        35                  40                  45
Ile Met Asp Tyr Tyr Glu Thr Asn Ser Gln Cys Ser Lys Pro Gly Ile
    50                  55                  60
Val Phe Ile Thr Lys Arg Gly His Ser Val Cys Thr Asn Pro Ser Asp
65                  70                  75                  80
Lys Trp Val Gln Asp Tyr Ile Lys Asp Met Lys Glu Asn
```

85 90

<210> 280
<211> 1344
<212> DNA
<213> Homo sapiens

<400> 280
tgcagactga tatggattca ccactgctaa cacctcctgg ttggaactac aggaatagaa 60
ctggaaaggg aaaaaaggca gcattcacca catcccaatc ctgaatccaa gagtctaaga 120
tagtccccca ctcctatctc aggcttagag gattagatta atctcctgga gggaagactc 180
ttccttgaaa catttttttt tatctgcctg tagctattgg gataattcgg gaaatccaca 240
gggacagttc aagtcatctt tgtcctctac tttctgttgc actctcagcc ttgttctctt 300
tttagaaact gcatggtaac tattatatag ctaaagaaga gcattctgac ctctgccctg 360
ggacttcctg gatcctcctc ttcttataaa tacaagggca gagctggtat cccggggagc 420
caggaagcag tgagcccagg agtcctcggc cagccctgcc tgcccaccag gaggatgaag 480
gtctccgtgg ctgccctctc ctgcctcatg cttgttgctg tccttggatc ccaggcccag 540
ttcacaaatg atgcagagac agagttaatg atgtcaaagc ttccactgga aaatccagta 600
gttctgaaca gctttcactt tgctgctgac tgctgcacct cctacatctc acaaagcatc 660
ccgtgttcac tcatgaaaag ttattttgaa acgagcagcg agtgctccaa gccaggtgtc 720
atattcctca ccaagaaggg gcggcaagtc tgtgccaaac ccagtggtcc gggagttcag 780
gattgcatga aaaagctgaa gccctactca atataataat aaagagacaa aagaggccag 840
ccacccacct ccaacacctc ctgagcctct gaagctccca ccaggccagc tctcctccca 900
caacagcttc ccacagcatg aagatctccg tggctgccat tcccttcttc ctcctcatca 960
ccatcgccct agggaccaag actgaatcct cctcacgggg accttaccac ccctcagagt 1020
gctgcttcac ctacactacc tacaagatcc cgcgtcagcg gattatggat tactatgaga 1080
ccaacagcca gtgctccaag cccggaattg tcttcatcac caaaaggggc cattccgtct 1140
gtaccaaccc cagtgacaag tgggtccagg actatatcaa ggacatgaag gagaactgag 1200
tgacccagaa ggggtggcga aggcacagct cagagacata aagagaagat gccaaggccc 1260
cctcctccac ccaccgctaa ctctcagccc cagtcaccct cttggagctt ccctgctttg 1320
aattaaagac cactcatgct cttc 1344

<210> 281
<211> 93
<212> PRT
<213> Homo sapiens

<400> 281
Met Lys Ile Ser Val Ala Ala Ile Pro Phe Phe Leu Leu Ile Thr Ile
1 5 10 15
Ala Leu Gly Thr Lys Thr Glu Ser Ser Ser Arg Gly Pro Tyr His Pro
20 25 30
Ser Glu Cys Cys Phe Thr Tyr Thr Thr Tyr Lys Ile Pro Arg Gln Arg
35 40 45
Ile Met Asp Tyr Tyr Glu Thr Asn Ser Gln Cys Ser Lys Pro Gly Ile
50 55 60
Val Phe Ile Thr Lys Arg Gly His Ser Val Cys Thr Asn Pro Ser Asp
65 70 75 80
Lys Trp Val Gln Asp Tyr Ile Lys Asp Met Lys Glu Asn
85 90

<210> 282
<211> 2750
<212> DNA
<213> Homo sapiens

<400> 282
tacgatggca acacctcccg caaggccccc aatgagttcc tgacctcggt ggtggagctc 60
atcggcgccg ccaaggccct gctggcgtgg ctggaccgat tgctatttta tgtgtcactt 120
gagagaaaac agttaaataa aaactaattt aatacaaaat ttagctgggc ttggtggcac 180
atgcctgtaa tcccagctac tcgggaggct gaagcaggag agttgcttga acctgggagg 240

```
cgtagattgc agtgagccaa gatcatccca ctgcactcca gcctgggcga cagagtgaga     300
cacagtctca aacaaaacaa aacaaaaagg aatttagagt agcccatggg gtagctatgc     360
ttaccaacat ccagtgggat ccccgtggat tctccctacc ccttttaag aggattgttg      420
ctaccttcta gggctccgtt tacagggatc actgatttct cagtcacgaa gaacaaaatt     480
atccagcttt gcttggacct gaccactaca gtccagaagg attgctttgt agcggaaatg     540
gaggataaag ttttaactgt ggtcaaggtt ttaaatggca tctgtgacaa aacaatccga     600
tctaccacag atcctgtgat gagccagtgt gcatgtctgg aggaagttca cttaccaaac     660
attaaacctg gggaaggcct gggcatgtac atcaaatcaa cctatgatgg gttacacgtg     720
attactggaa ccacagaaaa ttctcctgca gacagatctc agaagattca tgctggtgac     780
gaagtcattc aagttaatca gcaaactgtg gtgggatggc agctgaaaaa tctggtgaag     840
aaattgagag agaatcccac cggagttgtg ttactgctta agaagcgccc caccgggtct     900
ttcaacttta ctcctgctcc cctgaaaaac ctacggtgga agccacctct tgtacagacc     960
tcacctccac ccgcgacaac ccagtcccct gaaagcacta tggatacctc actgaagaag    1020
gagaagtcag ccatcctgga tctttatatt cctcctccgc ctgctgttcc ctactctccc    1080
cgggatgaga atggcagttt tgtttatgga gggtccagta agtgcaaaca accattgcct    1140
ggtcctaagg gttcagagtc cccgaattcc ttcttggacc aggaaagccg gagacgaaga    1200
ttcaccattg cagactcgga tcagttgcct gggtactcgg tggaaaccaa cattctgccc    1260
acaaaaatga gagagaaaac accatcttat grcaagccac ggcctttgtc catgcctgct    1320
gatgggaact ggatggggat tgtggaccct tttgccagac ctcgaggtca tggcaggaaa    1380
ggggaggatg ccctttgccg gtatttcagt aacgagcgga ttcctccgat cattgaagag    1440
agctcctctc ccccataccg gttctccaga cccacgaccg agcggcatct ggtccggggt    1500
gcggactaca tccgaggaag caggtgctac atcaactcag atctccacag cagcgccacg    1560
attccattcc aggaggaagg gaccaaaaag aaatctggct cctcagctac gaagtcctcg    1620
tccacagaac cgtccctcct ggtcagctgg tttacgcgcc tcaaactgtt gactcactga    1680
gagggaccct gctcaggcca cctgcctggc tcctgcccca agtgccttgc ttttacagtg    1740
gacagcctct tctcgtttcg gcctcagtat tatgtaggga ccttatgcaa tttctttttc    1800
ttttgaaaag ttatctactg cccttcttgg aagtttgcag gattggatgg gaacaaattc    1860
agaggatctt aggtgctggc ttgtggagac aaaaggaggg aaatgggtag agcctgtttg    1920
tcttgcttcc ccagagatag aatgtgaaga cacgcgctag aaatcgcagt cctggccaga    1980
gacgttatgg tcattgtgag ggactggtgg cattgttcct ttttgagggg ctgggggggac    2040
tcaaattggt ggctgttttc acacagatgt gttggtttgt ggtccaactt ctttatctga    2100
aaaagccagt gagaaaacat ttttgatttg atttttctaa actatctacc atattttaag    2160
tgtagcagct ttgactttgc aataacgtgg caagtatctg atttctcctt tgaggcagag    2220
gtttaagtgt aggcctgtta cacttgtttg atacctttt catgacagtc tcagtataga     2280
tcagttggta cagaaataca tgaacacatt ttgatagggc ttatttcaca caaagaagtt    2340
tatggttatt tgtgtggggt ggtgttgtta tatattattg tctttaaggg aaaagaagct    2400
ataagattcg ctgacagcca aagtatcatt tagaaaagtg aagaacaaga tttaggttga    2460
tgaaagatac atgagtttgc attttgacct gttcagtgtc tgtcttccag cacggtgtgt    2520
acacttcttc aaaattgtac acagtttgct aattagaaat atcttggaaa gcctcatggt    2580
cactaatttt caactagcat caggtatttt gaaaacgtgt gtctggatat taactcttgt    2640
ttaaactgaa tgtatgatat tttgttagaa tggaaaagta ctatcttgtt aatttaagta    2700
ttttaaatat agttgtatat ttttcttact cttaaaaaaa aaaaaaaaaa               2750
```

<210> 283
<211> 380
<212> PRT
<213> Homo sapiens

<220>
<221> VARIANT
<222> (1)...(380)
<223> Xaa = Any Amino Acid

<400> 283

```
Met Glu Asp Lys Val Leu Thr Val Val Lys Val Leu Asn Gly Ile Cys
 1               5                  10                  15
Asp Lys Thr Ile Arg Ser Thr Thr Asp Pro Val Met Ser Gln Cys Ala
            20                  25                  30
Cys Leu Glu Glu Val His Leu Pro Asn Ile Lys Pro Gly Glu Gly Leu
        35                  40                  45
Gly Met Tyr Ile Lys Ser Thr Tyr Asp Gly Leu His Val Ile Thr Gly
```

```
    50                  55                  60
Thr Thr Glu Asn Ser Pro Ala Asp Arg Ser Gln Lys Ile His Ala Gly
65                  70                  75                  80
Asp Glu Val Ile Gln Val Asn Gln Gln Thr Val Val Gly Trp Gln Leu
                85                  90                  95
Lys Asn Leu Val Lys Lys Leu Arg Glu Asn Pro Thr Gly Val Val Leu
            100                 105                 110
Leu Leu Lys Lys Arg Pro Thr Gly Ser Phe Asn Phe Thr Pro Ala Pro
        115                 120                 125
Leu Lys Asn Leu Arg Trp Lys Pro Pro Leu Val Gln Thr Ser Pro Pro
    130                 135                 140
Pro Ala Thr Thr Gln Ser Pro Glu Ser Thr Met Asp Thr Ser Leu Lys
145                 150                 155                 160
Lys Glu Lys Ser Ala Ile Leu Asp Leu Tyr Ile Pro Pro Pro Pro Ala
                165                 170                 175
Val Pro Tyr Ser Pro Arg Asp Glu Asn Gly Ser Phe Val Tyr Gly Gly
            180                 185                 190
Ser Ser Lys Cys Lys Gln Pro Leu Pro Gly Pro Lys Gly Ser Glu Ser
        195                 200                 205
Pro Asn Ser Phe Leu Asp Gln Glu Ser Arg Arg Arg Arg Phe Thr Ile
    210                 215                 220
Ala Asp Ser Asp Gln Leu Pro Gly Tyr Ser Val Glu Thr Asn Ile Leu
225                 230                 235                 240
Pro Thr Lys Met Arg Glu Lys Thr Pro Ser Tyr Xaa Lys Pro Arg Pro
                245                 250                 255
Leu Ser Met Pro Ala Asp Gly Asn Trp Met Gly Ile Val Asp Pro Phe
            260                 265                 270
Ala Arg Pro Arg Gly His Gly Arg Lys Gly Glu Asp Ala Leu Cys Arg
        275                 280                 285
Tyr Phe Ser Asn Glu Arg Ile Pro Pro Ile Ile Glu Glu Ser Ser Ser
    290                 295                 300
Pro Pro Tyr Arg Phe Ser Arg Pro Thr Thr Glu Arg His Leu Val Arg
305                 310                 315                 320
Gly Ala Asp Tyr Ile Arg Gly Ser Arg Cys Tyr Ile Asn Ser Asp Leu
                325                 330                 335
His Ser Ser Ala Thr Ile Pro Phe Gln Glu Glu Gly Thr Lys Lys Lys
            340                 345                 350
Ser Gly Ser Ser Ala Thr Lys Ser Ser Ser Thr Glu Pro Ser Leu Leu
        355                 360                 365
Val Ser Trp Phe Thr Arg Leu Lys Leu Leu Thr His
    370                 375                 380
```

<210> 284
<211> 1789
<212> DNA
<213> Homo sapiens

<400> 284

```
ggttcaggaa cctgctggtt ctgatacata aatcagacag cctctgctgc atgacacgaa      60
gcttgcttct gcctggcatc tgtgagcagc tgccaggctc cggccaggat cccttccttc     120
tcctcattgg ctgatggatc ccaaggggct cctctccttg accttcgtgc tgtttctctc     180
cctggctttt ggggcaagct acggaacagg tgggcgcatg atgaactgcc caaagattct     240
ccggcagttg ggaagcaaag tgctgctgcc cctgacatat gaaaggataa ataagagcat     300
gaacaaaagc atccacattg tcgtcacaat ggcaaaatca ctggagaaca gtgtcgagaa     360
caaaatagtg tctcttgatc catccgaagc aggccctcca cgttatctag gagatcgcta     420
caagttttat ctggagaatc tcaccctggg gatacgggaa agcaggaagg aggatgaggg     480
atggtacctt atgaccctgg agaaaaatgt ttcagttcag cgcttttgcc tgcagttgag     540
gctttatgag caggtctcca ctccagaaat taaagtttta aacaagaccc aggagaacgg     600
gacctgcacc ttgatactgg gctgcacagt ggagaagggg gaccatgtgg cttacagctg     660
gagtgaaaag gcgggcaccc acccactgaa cccagccaac agctcccacc tcctgtccct     720
caccctcggc ccccagcatg ctgacaatat ctacatctgc accgtgagca accctatcag     780
```

caacaattcc cagaccttca gcccgtggcc cggatgcagg acagacccct cagaaacaaa 840
accatgggca gtgtatgctg ggctgttagg gggtgtcatc atgattctca tcatggtggt 900
aatactacag ttgagaagaa gaggtaaaac gaaccattac cagacaacag tggaaaaaaa 960
aagccttacg atctatgccc aagtccagaa accaggtcct cttcagaaga aacttgactc 1020
cttcccagct caggaccctt gcaccaccat atatgttgct gccacagagc ctgtcccaga 1080
gtctgtccag gaaacaaatt ccatcacagt ctatgctagt gtgacacttc cagagagctg 1140
acaccagaga ccaacaaagg gactttctga aggaaaatgg aaaaaccaaa atgaacactg 1200
aacttggcca caggcccaag tttcctctgg cagacatgct gcacgtctgt acccttctca 1260
gatcaactcc ctggtgatgt ttcttccaca tacatctgtg aaatgaacaa ggaagtgagg 1320
cttcccaaga atttagcttg ctgtgcagtg gctgcaggcg cagaacagag cgttacttga 1380
taacagcgtt ccatctttgt gttgtagcag atgaaatgga cagtaatgtg agttcagact 1440
ttgggcatct tgctcttggc tggaactgat aataaaaatc agactgaaag ccaggacatc 1500
tgagtaccta tctcacacac tgaccaccag tcacaaagtc tggaaaagtt tacattttgg 1560
ctatctttac tttgttctgg gagctgatca tgataacctg cagacctgat caagcctctg 1620
tgcctcagtt tctctctcag gataaagagt gaatagaggc cgaagggtga atttcttatt 1680
atacataaaa cactctgata ttattgtata aaggaagcta agaatattat tttatttgca 1740
aaacccagaa gctaaaaagt caataaacag aaagaatgat tttgagaaa 1789

<210> 285
<211> 335
<212> PRT
<213> Homo sapiens

<400> 285

```
Met Asp Pro Lys Gly Leu Leu Ser Leu Thr Phe Val Leu Phe Leu Ser
 1               5                  10                  15
Leu Ala Phe Gly Ala Ser Tyr Gly Thr Gly Gly Arg Met Met Asn Cys
            20                  25                  30
Pro Lys Ile Leu Arg Gln Leu Gly Ser Lys Val Leu Leu Pro Leu Thr
        35                  40                  45
Tyr Glu Arg Ile Asn Lys Ser Met Asn Lys Ser Ile His Ile Val Val
    50                  55                  60
Thr Met Ala Lys Ser Leu Glu Asn Ser Val Glu Asn Lys Ile Val Ser
65                  70                  75                  80
Leu Asp Pro Ser Glu Ala Gly Pro Pro Arg Tyr Leu Gly Asp Arg Tyr
                85                  90                  95
Lys Phe Tyr Leu Glu Asn Leu Thr Leu Gly Ile Arg Glu Ser Arg Lys
            100                 105                 110
Glu Asp Glu Gly Trp Tyr Leu Met Thr Leu Glu Lys Asn Val Ser Val
        115                 120                 125
Gln Arg Phe Cys Leu Gln Leu Arg Leu Tyr Glu Gln Val Ser Thr Pro
    130                 135                 140
Glu Ile Lys Val Leu Asn Lys Thr Gln Glu Asn Gly Thr Cys Thr Leu
145                 150                 155                 160
Ile Leu Gly Cys Thr Val Glu Lys Gly Asp His Val Ala Tyr Ser Trp
                165                 170                 175
Ser Glu Lys Ala Gly Thr His Pro Leu Asn Pro Ala Asn Ser Ser His
            180                 185                 190
Leu Leu Ser Leu Thr Leu Gly Pro Gln His Ala Asp Asn Ile Tyr Ile
        195                 200                 205
Cys Thr Val Ser Asn Pro Ile Ser Asn Asn Ser Gln Thr Phe Ser Pro
    210                 215                 220
Trp Pro Gly Cys Arg Thr Asp Pro Ser Glu Thr Lys Pro Trp Ala Val
225                 230                 235                 240
Tyr Ala Gly Leu Leu Gly Gly Val Ile Met Ile Leu Ile Met Val Val
                245                 250                 255
Ile Leu Gln Leu Arg Arg Arg Gly Lys Thr Asn His Tyr Gln Thr Thr
            260                 265                 270
Val Glu Lys Lys Ser Leu Thr Ile Tyr Ala Gln Val Gln Lys Pro Gly
        275                 280                 285
Pro Leu Gln Lys Lys Leu Asp Ser Phe Pro Ala Gln Asp Pro Cys Thr
```

```
    290                 295                 300
Thr Ile Tyr Val Ala Ala Thr Glu Pro Val Pro Glu Ser Val Gln Glu
305                 310                 315                 320
Thr Asn Ser Ile Thr Val Tyr Ala Ser Val Thr Leu Pro Glu Ser
                325                 330                 335
```

<210> 286
<211> 305
<212> PRT
<213> Homo sapiens

<400> 286

```
Met Asp Pro Lys Gly Leu Leu Ser Leu Thr Phe Val Leu Phe Leu Ser
 1               5                  10                  15
Leu Ala Phe Gly Ala Ser Tyr Gly Thr Gly Gly Arg Met Met Asn Cys
            20                  25                  30
Pro Lys Ile Leu Arg Gln Leu Gly Ser Lys Val Leu Leu Pro Leu Thr
        35                  40                  45
Tyr Glu Arg Ile Asn Lys Ser Met Asn Lys Ser Ile His Ile Val Val
    50                  55                  60
Thr Met Ala Lys Ser Leu Glu Asn Ser Val Glu Asn Lys Ile Val Ser
65                  70                  75                  80
Leu Asp Pro Ser Glu Ala Gly Pro Pro Arg Tyr Leu Gly Asp Arg Tyr
                85                  90                  95
Lys Phe Tyr Leu Glu Asn Leu Thr Leu Gly Ile Arg Glu Ser Arg Lys
            100                 105                 110
Glu Asp Glu Gly Trp Tyr Leu Met Thr Leu Glu Lys Asn Val Ser Val
        115                 120                 125
Gln Arg Phe Cys Leu Gln Leu Arg Leu Tyr Glu Gln Val Ser Thr Pro
    130                 135                 140
Glu Ile Lys Val Leu Asn Lys Thr Gln Glu Asn Gly Thr Cys Thr Leu
145                 150                 155                 160
Ile Leu Gly Cys Thr Val Glu Lys Gly Asp His Val Ala Tyr Ser Trp
                165                 170                 175
Ser Glu Lys Ala Gly Thr His Pro Leu Asn Pro Ala Asn Ser Ser His
            180                 185                 190
Leu Leu Ser Leu Thr Leu Gly Pro Gln His Ala Asp Asn Ile Tyr Ile
        195                 200                 205
Cys Thr Val Ser Asn Pro Ile Ser Asn Asn Ser Gln Thr Phe Ser Pro
    210                 215                 220
Trp Pro Gly Cys Arg Thr Asp Pro Ser Gly Lys Thr Asn His Tyr Gln
225                 230                 235                 240
Thr Thr Val Glu Lys Lys Ser Leu Thr Ile Tyr Ala Gln Val Gln Lys
                245                 250                 255
Pro Gly Pro Leu Gln Lys Lys Leu Asp Ser Phe Pro Ala Gln Asp Pro
            260                 265                 270
Cys Thr Thr Ile Tyr Val Ala Ala Thr Glu Pro Val Pro Glu Ser Val
        275                 280                 285
Gln Glu Thr Asn Ser Ile Thr Val Tyr Ala Ser Val Thr Leu Pro Glu
    290                 295                 300
Ser
305
```

<210> 287
<211> 298
<212> PRT
<213> Homo sapiens

<400> 287

```
Met Asp Pro Lys Gly Leu Leu Ser Leu Thr Phe Val Leu Phe Leu Ser
 1               5                  10                  15
```

```
Leu Ala Phe Gly Ala Ser Tyr Gly Thr Gly Gly Arg Met Met Asn Cys
            20                  25                  30
Pro Lys Ile Leu Arg Gln Leu Gly Ser Lys Val Leu Leu Pro Leu Thr
        35                  40                  45
Tyr Glu Arg Ile Asn Lys Ser Met Asn Lys Ser Ile His Ile Val Val
    50                  55                  60
Thr Met Ala Lys Ser Leu Glu Asn Ser Val Glu Asn Lys Ile Val Ser
65                  70                  75                  80
Leu Asp Pro Ser Glu Ala Gly Pro Pro Arg Tyr Leu Gly Asp Arg Tyr
                85                  90                  95
Lys Phe Tyr Leu Glu Asn Leu Thr Leu Gly Ile Arg Glu Ser Arg Lys
            100                 105                 110
Glu Asp Glu Gly Trp Tyr Leu Met Thr Leu Glu Lys Asn Val Ser Val
        115                 120                 125
Gln Arg Phe Cys Leu Gln Leu Arg Leu Tyr Glu Gln Val Ser Thr Pro
    130                 135                 140
Glu Ile Lys Val Leu Asn Lys Thr Gln Glu Asn Gly Thr Cys Thr Leu
145                 150                 155                 160
Ile Leu Gly Cys Thr Val Glu Lys Gly Asp His Val Ala Tyr Ser Trp
                165                 170                 175
Ser Glu Lys Ala Gly Thr His Pro Leu Asn Pro Ala Asn Ser Ser His
            180                 185                 190
Leu Leu Ser Leu Thr Leu Gly Pro Gln His Ala Asp Asn Ile Tyr Ile
        195                 200                 205
Cys Thr Val Ser Asn Pro Ile Ser Asn Asn Ser Gln Thr Phe Ser Pro
    210                 215                 220
Trp Pro Gly Cys Arg Thr Asp Pro Ser Glu Thr Lys Pro Trp Ala Val
225                 230                 235                 240
Tyr Ala Gly Leu Leu Gly Gly Val Ile Met Ile Leu Ile Met Val Val
                245                 250                 255
Ile Leu Gln Leu Arg Arg Arg Gly Lys Thr Asn His Tyr Gln Thr Thr
            260                 265                 270
Val Glu Lys Lys Ser Leu Thr Ile Tyr Ala Gln Val Gln Lys Pro Gly
        275                 280                 285
Asp Thr His His Gln Thr Ser Asp Leu Phe
    290                 295
```

<210> 288
<211> 3640
<212> DNA
<213> Homo sapiens

<400> 288

```
aggacgggac ggagccgggg cagccagaag aggtgggaaa agcggaggag gacgcccagg      60
aggaggcggc ggcggcggcc gggaagtgaa aggtctcgca aagttcagcg gcggctgcgg     120
gcgccgagcc ccgggctagc ggcagacgag cccgcagggc cgctccgcgg ggcagcgcag     180
ccaggccggc tatggtcccg gggctcccgc cgccccccag gtgcccggga cccgccaggc     240
cggtgcgcga gggtcacccc acctccccgc gcggtcccgg cccctggctc ccagctgccg     300
gcgaccgctg accgagcccg gcgccccagg aggaggaaga aaccagggcc ccgttccctc     360
ccgaggacgg cggcgcttca tcccgcagcc cagaggtctc ggctccctcc ggcacccgcc     420
cggcccggct gctcccggct cctcccggcc atggggagct gcgcgcggct gctgctgctc     480
tggggctgca cggtggtggc cgcaggactg agtggagtag ctggagtgag ttcccgctgt     540
gaaaaagcct gcaaccctcg gatgggaaat ttggctttgg ggcgaaaact ctgggcagac     600
accacctgcg gtcagaatgc taccgaactg tactgcttct acagtgagaa cacggatctg     660
acttgtcggc agcccaaatg tgacaagtgc aatgctgcct atcctcacct ggctcacctg     720
ccatctgcca tggcagactc atccttccgg tttcctcgca catggtggca gtctgcggag     780
gatgtgcaca gagaaaagat ccagttagac ctggaagctg aattctactt cactcaccta     840
attgtgatgt tcaagtcccc caggccggct gccatggtgc tggaccgctc ccaggacttt     900
gggaaaacat ggaagcctta taagtacttt gcgactaact gctccgctac atttggcctg     960
gaagatgatg ttgtcaagaa gggcgctatt tgtacttcta aatactccag tccttttcca    1020
tgcactggag gagaggttat tttcaaagct ttgtcaccac catacgatac agagaaccct    1080
```

```
tacagtgcca aagttcagga gcagctgaag atcaccaacc ttcgcgtgca gctgctgaaa    1140
cgacagtctt gtccctgtca gagaaatgac ctgaacgaag agcctcaaca ttttacacac    1200
tatgcaatct atgatttcat tgtcaagggc agctgcttct gcaatggcca cgctgatcaa    1260
tgcatacctg ttcatggctt cagacctgtc aaggccccag gaacattcca catggtccat    1320
gggaagtgta tgtgtaagca caacacagca ggcagccact gccagcactg tgccccgtta    1380
tacaatgacc ggccatggga ggcagctgat ggcaaaacgg gggctcccaa cgagtgcaga    1440
acctgcaagt gtaatgggca tgctgatacc tgtcacttcg acgttaatgt gtgggaggca    1500
tcagggaatc gtagtggtgg tgtctgtgat gactgtcagc acaacacaga aggacagtat    1560
tgccagaggt gcaagccagg cttctatcgt gacctgcgga gacccttctc agctccagat    1620
gcttgcaaac cgtgttcctg ccatccagta ggatcagctg tccttcctgc caactcagtg    1680
accttctgcg accccagcaa tggtgactgc ccttgcaagc ctggggtggc agggcgacgt    1740
tgtgacaggt gcatggtggg atactggggc ttcggagact atggctgtcg accatgtgac    1800
tgtgcgggga gctgtgaccc tatcaccgga gactgcatca gcagccacac agacatagac    1860
tggtatcatg aagttcctga cttccgtccc gtgcacaata agagcgaacc agcctgggag    1920
tgggaggatg cgcaggggtt ttctgcactt ctacactcag gtaaatgcga atgtaaggaa    1980
cagacattag gaaatgccaa ggcattctgt ggaatgaaat attcatatgt gctaaaaata    2040
aagattttat cagctcatga taaaggtact catgttgagg tcaatgtgaa gattaaaaag    2100
gtcttaaaat ctaccaaact gaagattttc cgaggaaagc gaacattata tccagaatca    2160
tggacggaca gaggatgcac ttgtccaatc ctcaatcctg gtttggaata ccttgtagca    2220
ggacatgagg atataagaac aggcaaacta attgtgaata tgaaaagctt tgtccagcac    2280
tggaaacctt ctcttggaag aaaagtcatg gatattttaa aaagagagtg caagtagcat    2340
taagatggat agcacataat ggcacttgtc tatgtacaaa acacaaactt tagagcaaga    2400
agacctcaga caggaaactg gaatttttta aagtgccaaa acatatagaa atgtttgaat    2460
gcatgggtct tatctaactt atctcttctg gacccatgtt taaatacagt tttatttcat    2520
gaagagaaat gaaaacccct acactgatat ctgttttcta tgggactgat tctgaaattc    2580
ttaactatta agaatatttt aatagcagca tgacatttag cagtaatcca ttaagggcag    2640
tacctctaac aaggacgcct tccagcttca gcgatgttac ttacgtttga tgctacttaa    2700
agtaatgaat gacgttttaa ggaatcccta accctactat cagaaaaggt gtttgttaaa    2760
gagccttctc ttgtgtgtta cgcatgaact ttggtctgta ggtgttaaat ggaacctctc    2820
catgtgtata tagtatttcc ttgtataaag cactttacta cctaccactt gtgttgtgaa    2880
cgtttggtga ctgctgttga aagaaggaaa agggtgtgtg agaaagccta ctgaagcagc    2940
agcactgcca ctacatgtgg acaaaagtga ccatataaaa gaagttgtgc tatttaactc    3000
tgaatacttg gagaaactag gtgaagatgc aaccagaaag gagaatatgt atgcgtgaag    3060
tctcagcttt gagctggagg ctagattcca agatgacagc catgatgaaa ctttttaaaa    3120
aactaaacca gaagagactt taaaataaga gaaagaaatc ataaatgtag acatatgctt    3180
ggctaaaggg gaaatggact ttaaatttta aagagctcat ttgcaatgca cttgtataca    3240
cttcaaaaat tattgtagac acagaatttg ttatattttt gtgcttagta tttaaacctg    3300
aacattgaaa cagttttcct ccttgtcttt cttaacagta atagtcatta tatttacctg    3360
ttttttaaca caatgtatgt gatagtcaaa aaatcacagt ttttcattat tattcatctt    3420
ctgtacccac gcataaccac tatacatagt ttcttttgta cttgaatata caaaacatga    3480
acacagtgcc atatgaataa tttcacatac agaacctttt tttctctgaa gtcctgtgga    3540
cttgcaaata tatatatata ttgctttgtt aatttgtttt tatatttcat atatgtaata    3600
aaggaatatg atctgaaaaa aaaaaaaaaa aaaaaaaaaa                          3640
```

<210> 289
<211> 628
<212> PRT
<213> Homo sapiens

<400> 289

```
Met Gly Ser Cys Ala Arg Leu Leu Leu Leu Trp Gly Cys Thr Val Val
 1               5                  10                  15
Ala Ala Gly Leu Ser Gly Val Ala Gly Val Ser Ser Arg Cys Glu Lys
            20                  25                  30
Ala Cys Asn Pro Arg Met Gly Asn Leu Ala Leu Gly Arg Lys Leu Trp
        35                  40                  45
Ala Asp Thr Thr Cys Gly Gln Asn Ala Thr Glu Leu Tyr Cys Phe Tyr
    50                  55                  60
Ser Glu Asn Thr Asp Leu Thr Cys Arg Gln Pro Lys Cys Asp Lys Cys
65                  70                  75                  80
Asn Ala Ala Tyr Pro His Leu Ala His Leu Pro Ser Ala Met Ala Asp
```

```
                85                  90                  95
Ser Ser Phe Arg Phe Pro Arg Thr Trp Trp Gln Ser Ala Glu Asp Val
            100                 105                 110
His Arg Glu Lys Ile Gln Leu Asp Leu Glu Ala Glu Phe Tyr Phe Thr
        115                 120                 125
His Leu Ile Val Met Phe Lys Ser Pro Arg Pro Ala Ala Met Val Leu
    130                 135                 140
Asp Arg Ser Gln Asp Phe Gly Lys Thr Trp Lys Pro Tyr Lys Tyr Phe
145                 150                 155                 160
Ala Thr Asn Cys Ser Ala Thr Phe Gly Leu Glu Asp Asp Val Val Lys
                165                 170                 175
Lys Gly Ala Ile Cys Thr Ser Lys Tyr Ser Ser Pro Phe Pro Cys Thr
            180                 185                 190
Gly Gly Glu Val Ile Phe Lys Ala Leu Ser Pro Pro Tyr Asp Thr Glu
        195                 200                 205
Asn Pro Tyr Ser Ala Lys Val Gln Glu Gln Leu Lys Ile Thr Asn Leu
    210                 215                 220
Arg Val Gln Leu Leu Lys Arg Gln Ser Cys Pro Cys Gln Arg Asn Asp
225                 230                 235                 240
Leu Asn Glu Glu Pro Gln His Phe Thr His Tyr Ala Ile Tyr Asp Phe
                245                 250                 255
Ile Val Lys Gly Ser Cys Phe Cys Asn Gly His Ala Asp Gln Cys Ile
            260                 265                 270
Pro Val His Gly Phe Arg Pro Val Lys Ala Pro Gly Thr Phe His Met
        275                 280                 285
Val His Gly Lys Cys Met Cys Lys His Asn Thr Ala Gly Ser His Cys
    290                 295                 300
Gln His Cys Ala Pro Leu Tyr Asn Asp Arg Pro Trp Glu Ala Ala Asp
305                 310                 315                 320
Gly Lys Thr Gly Ala Pro Asn Glu Cys Arg Thr Cys Lys Cys Asn Gly
                325                 330                 335
His Ala Asp Thr Cys His Phe Asp Val Asn Val Trp Glu Ala Ser Gly
            340                 345                 350
Asn Arg Ser Gly Gly Val Cys Asp Asp Cys Gln His Asn Thr Glu Gly
        355                 360                 365
Gln Tyr Cys Gln Arg Cys Lys Pro Gly Phe Tyr Arg Asp Leu Arg Arg
    370                 375                 380
Pro Phe Ser Ala Pro Asp Ala Cys Lys Pro Cys Ser Cys His Pro Val
385                 390                 395                 400
Gly Ser Ala Val Leu Pro Ala Asn Ser Val Thr Phe Cys Asp Pro Ser
                405                 410                 415
Asn Gly Asp Cys Pro Cys Lys Pro Gly Val Ala Gly Arg Arg Cys Asp
            420                 425                 430
Arg Cys Met Val Gly Tyr Trp Gly Phe Gly Asp Tyr Gly Cys Arg Pro
        435                 440                 445
Cys Asp Cys Ala Gly Ser Cys Asp Pro Ile Thr Gly Asp Cys Ile Ser
    450                 455                 460
Ser His Thr Asp Ile Asp Trp Tyr His Glu Val Pro Asp Phe Arg Pro
465                 470                 475                 480
Val His Asn Lys Ser Glu Pro Ala Trp Glu Trp Glu Asp Ala Gln Gly
                485                 490                 495
Phe Ser Ala Leu Leu His Ser Gly Lys Cys Glu Cys Lys Glu Gln Thr
            500                 505                 510
Leu Gly Asn Ala Lys Ala Phe Cys Gly Met Lys Tyr Ser Tyr Val Leu
        515                 520                 525
Lys Ile Lys Ile Leu Ser Ala His Asp Lys Gly Thr His Val Glu Val
    530                 535                 540
Asn Val Lys Ile Lys Lys Val Leu Lys Ser Thr Lys Leu Lys Ile Phe
545                 550                 555                 560
Arg Gly Lys Arg Thr Leu Tyr Pro Glu Ser Trp Thr Asp Arg Gly Cys
                565                 570                 575
```

```
Thr Cys Pro Ile Leu Asn Pro Gly Leu Glu Tyr Leu Val Ala Gly His
            580                 585                 590
Glu Asp Ile Arg Thr Gly Lys Leu Ile Val Asn Met Lys Ser Phe Val
        595                 600                 605
Gln His Trp Lys Pro Ser Leu Gly Arg Lys Val Met Asp Ile Leu Lys
    610                 615                 620
Arg Glu Cys Lys
625
```

<210> 290
<211> 2540
<212> DNA
<213> Mouse

<400> 290

```
gtcgcgatgc tgctgcgcct gctgctggcc tgggtggccg cggtgcccgc actgggccag      60
gtcccctgga cgccggagcc tcgagccgcg tgcggcccca gcagctgcta cgcgctcttt     120
ccccggcgcc gcacattcct ggaagcttgg cgggcgtgcc gcgaattggg gggcaacctg     180
gccacaccgc ggaccccaga ggaggcccag cgtgtggaca gcctggtggg ggtcgggccg     240
gccaacgggc tgctatggat tgggttgcag cggcaggcta ggcaatgcca gccgcagcgc     300
ccactgcggg gcttcatatg gaccacggga gaccaggaca ccgccttcac caactgggcc     360
cagccggcta cggaaggacc ctgcccagcc cagcgctgtg cagcccttga ggccagcgga     420
gagcatcgct ggctcgaagg ctcgtgcaca ctggctgtcg atggctacct ctgccagttt     480
ggttttgagg gtgcctgccc tgccttgccg cttgaggtgg gtcaggccgg tcccgctgtc     540
tacaccacac ccttcaacct ggtttccagc gagttcgaat ggctgccctt tggctccgtg     600
gcagctgtgc agtgccaagc tggcagggga gcttctctgc tgtgcgtgaa acagccttca     660
ggtggcgtgg gctggtccca gactggcccg ctgtgcccag ggactggctg tggtcctgac     720
aatgggggtt gcgaacatga gtgtgtggaa gaggtggacg gtgctgtgtc ctgccgctgc     780
agtgaaggct tccgtctagc agcagatggg cacagttgtg aagacccctg tgcccaggcc     840
ccctgtgagc agcagtgtga acctggaggg ccacaaggct atagctgcca ctgtcgcctt     900
ggcttccggc cagctgagga tgatccacac cgctgcgtgg acacggatga gtgccagatt     960
gctggtgtgt gccagcagat gtgtgtcaac tatgttggtg gctttgagtg ttactgcagc    1020
gagggtcacg agcttgaggc agatggtatc agctgtagcc ctgcaggagc catgggtgcc    1080
caggcttccc aggatctcag agatgagttg ctggatgatg gagaagaagg ggaggatgaa    1140
gaggagccct gggaggactt tgatggcacc tggacagagg aacaggggat cctatggctg    1200
gcacctacac atccacctga ctttggcctg ccctataggc ccaacttccc acaggatgga    1260
gagcctcaga gattgcacct ggagcctacc tggccacccc cacttagtgc ccccaggggc    1320
ccctaccact cctcagtggt gtctgccaca cggcccatgg tgatctctgc cactcgaccc    1380
acactacctt ctgcccacaa gacctctgtt atttcagcta cacgcccacc cctgagccct    1440
gtccacccac ctgccatggc ccctgccaca cctccagctg tgttctctga gcaccagatc    1500
cccaaaatca aggccaatta tccagacctg ccttttggcc acaagcctgg gataacctcg    1560
gccactcacc cagcacggtc tcctccgtac cagccccca ttatctcaac caactatccc    1620
caagtcttcc ctccccacca ggcccctatg tctccagata cccacactat cacttatttg    1680
cctccagtcc cccctcacct tgatcctggg gataccactt ctaaagccca tcaacaccct    1740
ttgctcccag atgctccagg tatcagaacc caggcccccc agctttctgt ctcagctctc    1800
cagccccctc ttcctaccaa ctccaggtct tctgtccatg aaactcctgt gcctgctgcc    1860
aaccagcccc cagccttccc ttcttctccc ctccccccctc agaggcccac taaccagacc    1920
tcatctatca gccctacaca ttcctattcc agagcccctc tagtcccaag ggaaggagtt    1980
cccagtccca aatcagtgcc acagctgccc tcggtgccct ccacagcagc tccaacagcc    2040
ctggcagagt caggtcttgc aggccaaagc caaagggatg accgctggct gctggtggca    2100
ctcctggtgc caacatgtgt cttcttggtg gtgctgcttg ccctgggcat tgtgtactgc    2160
actcgctgtg gctcccacgc acccaacaag cggatcacgg actgctatcg ctgggtcaca    2220
catgctggga acaagagctc aacagaaccc atgccccca gaggcagcct tacaggggta    2280
cagacctgta gaaccagtgt gtgatggggt gcagatgccc ctttgtggga tagaagaaaa    2340
ggacttgctt tggacacatg gctgagacca caccaaggac ttatgggggc tgcccagctg    2400
acagaggagg ttctgttctt tgagcccagc atccatggca aaggacacac caggactcca    2460
ggacctcaag gggtgggtgc tgggatcttc tccaataaat ggggtgccaa cctcacccaa    2520
aaaaaaaaaa aaaaaaaaaa                                                2540
```

<210> 291
<211> 765

<212> PRT
<213> Mouse

<400> 291

```
Met Leu Leu Arg Leu Leu Leu Ala Trp Val Ala Ala Val Pro Ala Leu
 1               5                  10                  15
Gly Gln Val Pro Trp Thr Pro Glu Pro Arg Ala Ala Cys Gly Pro Ser
            20                  25                  30
Ser Cys Tyr Ala Leu Phe Pro Arg Arg Arg Thr Phe Leu Glu Ala Trp
        35                  40                  45
Arg Ala Cys Arg Glu Leu Gly Gly Asn Leu Ala Thr Pro Arg Thr Pro
    50                  55                  60
Glu Glu Ala Gln Arg Val Asp Ser Leu Val Gly Val Gly Pro Ala Asn
65                  70                  75                  80
Gly Leu Leu Trp Ile Gly Leu Gln Arg Gln Ala Arg Gln Cys Gln Pro
                85                  90                  95
Gln Arg Pro Leu Arg Gly Phe Ile Trp Thr Thr Gly Asp Gln Asp Thr
            100                 105                 110
Ala Phe Thr Asn Trp Ala Gln Pro Ala Thr Glu Gly Pro Cys Pro Ala
        115                 120                 125
Gln Arg Cys Ala Ala Leu Glu Ala Ser Gly Glu His Arg Trp Leu Glu
    130                 135                 140
Gly Ser Cys Thr Leu Ala Val Asp Gly Tyr Leu Cys Gln Phe Gly Phe
145                 150                 155                 160
Glu Gly Ala Cys Pro Ala Leu Pro Leu Glu Val Gly Gln Ala Gly Pro
                165                 170                 175
Ala Val Tyr Thr Thr Pro Phe Asn Leu Val Ser Ser Glu Phe Glu Trp
            180                 185                 190
Leu Pro Phe Gly Ser Val Ala Ala Val Gln Cys Gln Ala Gly Arg Gly
        195                 200                 205
Ala Ser Leu Leu Cys Val Lys Gln Pro Ser Gly Gly Val Gly Trp Ser
    210                 215                 220
Gln Thr Gly Pro Leu Cys Pro Gly Thr Gly Cys Gly Pro Asp Asn Gly
225                 230                 235                 240
Gly Cys Glu His Glu Cys Val Glu Glu Val Asp Gly Ala Val Ser Cys
                245                 250                 255
Arg Cys Ser Glu Gly Phe Arg Leu Ala Ala Asp Gly His Ser Cys Glu
            260                 265                 270
Asp Pro Cys Ala Gln Ala Pro Cys Glu Gln Gln Cys Glu Pro Gly Gly
        275                 280                 285
Pro Gln Gly Tyr Ser Cys His Cys Arg Leu Gly Phe Arg Pro Ala Glu
    290                 295                 300
Asp Asp Pro His Arg Cys Val Asp Thr Asp Glu Cys Gln Ile Ala Gly
305                 310                 315                 320
Val Cys Gln Gln Met Cys Val Asn Tyr Val Gly Gly Phe Glu Cys Tyr
                325                 330                 335
Cys Ser Glu Gly His Glu Leu Glu Ala Asp Gly Ile Ser Cys Ser Pro
            340                 345                 350
Ala Gly Ala Met Gly Ala Gln Ala Ser Gln Asp Leu Arg Asp Glu Leu
        355                 360                 365
Leu Asp Asp Gly Glu Glu Gly Glu Asp Glu Glu Glu Pro Trp Glu Asp
    370                 375                 380
Phe Asp Gly Thr Trp Thr Glu Glu Gln Gly Ile Leu Trp Leu Ala Pro
385                 390                 395                 400
Thr His Pro Pro Asp Phe Gly Leu Pro Tyr Arg Pro Asn Phe Pro Gln
                405                 410                 415
Asp Gly Glu Pro Gln Arg Leu His Leu Glu Pro Thr Trp Pro Pro Pro
            420                 425                 430
Leu Ser Ala Pro Arg Gly Pro Tyr His Ser Ser Val Val Ser Ala Thr
        435                 440                 445
Arg Pro Met Val Ile Ser Ala Thr Arg Pro Thr Leu Pro Ser Ala His
```

```
    450                 455                 460
Lys Thr Ser Val Ile Ser Ala Thr Arg Pro Pro Leu Ser Pro Val His
465                 470                 475                 480
Pro Pro Ala Met Ala Pro Ala Thr Pro Pro Ala Val Phe Ser Glu His
                485                 490                 495
Gln Ile Pro Lys Ile Lys Ala Asn Tyr Pro Asp Leu Pro Phe Gly His
            500                 505                 510
Lys Pro Gly Ile Thr Ser Ala Thr His Pro Ala Arg Ser Pro Pro Tyr
        515                 520                 525
Gln Pro Pro Ile Ile Ser Thr Asn Tyr Pro Gln Val Phe Pro Pro His
    530                 535                 540
Gln Ala Pro Met Ser Pro Asp Thr His Thr Ile Thr Tyr Leu Pro Pro
545                 550                 555                 560
Val Pro Pro His Leu Asp Pro Gly Asp Thr Thr Ser Lys Ala His Gln
                565                 570                 575
His Pro Leu Leu Pro Asp Ala Pro Gly Ile Arg Thr Gln Ala Pro Gln
            580                 585                 590
Leu Ser Val Ser Ala Leu Gln Pro Pro Leu Pro Thr Asn Ser Arg Ser
        595                 600                 605
Ser Val His Glu Thr Pro Val Pro Ala Ala Asn Gln Pro Pro Ala Phe
    610                 615                 620
Pro Ser Ser Pro Leu Pro Pro Gln Arg Pro Thr Asn Gln Thr Ser Ser
625                 630                 635                 640
Ile Ser Pro Thr His Ser Tyr Ser Arg Ala Pro Leu Val Pro Arg Glu
                645                 650                 655
Gly Val Pro Ser Pro Lys Ser Val Pro Gln Leu Pro Ser Val Pro Ser
            660                 665                 670
Thr Ala Ala Pro Thr Ala Leu Ala Glu Ser Gly Leu Ala Gly Gln Ser
        675                 680                 685
Gln Arg Asp Asp Arg Trp Leu Leu Val Ala Leu Leu Val Pro Thr Cys
    690                 695                 700
Val Phe Leu Val Val Leu Leu Ala Leu Gly Ile Val Tyr Cys Thr Arg
705                 710                 715                 720
Cys Gly Ser His Ala Pro Asn Lys Arg Ile Thr Asp Cys Tyr Arg Trp
                725                 730                 735
Val Thr His Ala Gly Asn Lys Ser Ser Thr Glu Pro Met Pro Pro Arg
            740                 745                 750
Gly Ser Leu Thr Gly Val Gln Thr Cys Arg Thr Ser Val
        755                 760                 765
```

<210> 292
<211> 3020
<212> DNA
<213> Mouse

<400> 292

```
atgtttcctt gctaccatgg tttcctgaac tcaagtggcc agtgtgtggg gcctctgagc      60
cacactctct tgcccacctc tgccaccagt ccacgaagga tgaggaaggg tattggattg     120
tcctggacct cctggaagct agactagggt ctggagcaac gaccggcttt ggactctctg     180
attcaggttc ctcctaagcc tcagagggac aaaaaagagt ccctgcaagt cgtccacggg     240
gctgggagca gccgggtggc tcatgactac tcagagagtc tgcccaaaga aaagagtctt     300
gtattggaaa ggtttctggg tacctgaccg tgttgcgttt gtttctaccc aacgtttaac     360
agagagccca gagccatgat gaagaccttg tccagtggga actgcacact caatgtgcct     420
gctaagaact cctaccgcat ggtggtgctg ggtgcctccc gagtgggcaa gagctccatt     480
gtctcccgct tcctcaatgg ccgctttgag gaccagtaca cgcccactat cgaggacttt     540
catcgcaagg tgtacaacat ccacggggac atgtaccagc tggatatcct ggacacctct     600
ggcaaccacc cattccctgc catgcgccgg ctctccatcc tcacaggaga tgtcttcatc     660
ctggtgttca gcctggatag ccgggagtcc tttgatgagg tcaagcgcct ccagaaacag     720
atcctggagg tcaagtcctg cctgaagaat aaaaccaagg aggcagcaga gctgcccatg     780
gtgatctgtg ggaacaagaa tgaccacagt gagctgtgcc gccaggtccc tgccatggag     840
gctgagctgc tggtgtctgg tgatgaaaac tgcgcctatt tcgaggtgtc agccaagaag     900
```

aacactaatg tgaacgagat gttctatgtg ctgttcagca tggccaagct gccccatgag 960
atgagccctg cactgcacca taagatctcc gtgcagtacg gcgatgcttt tcacccccgg 1020
cccttctgca tgcgtcgcac taaggtcgca ggtgcctatg gcatggtctc acccttgcc 1080
cgacgcccca gtgtcaacag tgacctcaag tacatcaagg ccaaggtcct acgggagggc 1140
caggcccgag agagggacaa gtgtagcatc cagtgagagg cagggacatc ggggaggggg 1200
cttgggcagt gccttaaggg aggtggctga ggattcccac tgcgcacatc ccacagaggg 1260
ccctaggtgt gtaccctgtg cccattctct tgtttcctgg acacctcctg tgagccgtga 1320
gtgtggttcc tttgtgggag gacggagaca tgtctaggga catgacagca ctcatgccga 1380
gacaagcttt ccgtgggagg gatgcaaaaa ggccaggagt cctgcatcaa agcaagatgc 1440
tcagtacaag tcacaggatg agaacatctt agccagatgc cccagccagg ttccctggtg 1500
gcctctgctc cctctgttca gaccagcttg gtctcagtgt ccctggagaa accaccatct 1560
tgggtcttca gctcctgccg tctggcccag ctgtgtacac tgccccccaa tttagcccct 1620
ggggccatca tgaccttgag tggaggggag agagagagag agagagagag agagagagag 1680
agagagagag agagagacct gtgtccccca gatcactgcc ttttggctcc actcccaggc 1740
tcctccatac gatatttctc tttgttttga agtgtctttc ctgttctgtt tgcagtagac 1800
atgaagtcct tgtactgtaa gaggccaatg ctttgtcttt gaccgggctt cccaattcaa 1860
atccattgct ttggccgggg tctccctccc tgctcccagg caggctgtat tctgcccagt 1920
gtccatcggc ctacaaagag cccacagtgc cacagtcaca gcagtaatct cctgccctct 1980
ggagaggatg actgggcttt gagagagtga ttctaacccc ctccgcactc ctaactagtt 2040
caggacagag ctctgactag atgcagcttt cttctgcttt agttccttaa acatctgcca 2100
agcacctacc tgatactggt cccttgtgtg ctaggcaaca gagagcgagg ggtcctgtgt 2160
gtccccagct ccggcctctg ccctcccatg gtgccctttc tgcgcacaca gctgttggag 2220
gaagtggagc agttgagagc cagagccgag tccaggaaag gttggaagga catattgcag 2280
gacttaccct agtgttcagg ctatgctagg tacacaggag tgggggtgac cctgaaaacc 2340
aaaggtcctg ttcaccacct cttaatgcat ctgtgcttta gtcttattag tactgcagct 2400
ggcccatttg agatgactct ggataaagac acctgctgcc aagctttcaa cctgagtttg 2460
gtcccagggt tccatgtggt ggaaggagag aagtcatcca ttgacctcca cacatccatc 2520
atggtacccc taccccccc ccccccccatg aattattgaa gctgatgatt atcagaaacc 2580
acagcaatct aatagtgcat tctctcaagg cccaggtcac tccctgcaag ctgggtcggc 2640
catgggcctt ccatacacac cacgtcatac cctgtctcct tggagctccc agtagccggg 2700
atttggatca tgttacatat gccttcctca gagcaatcac tgaggctatc tgtggatact 2760
gtgcacattg tcacccttgc tctgcacacc aggcccagcc cagactccat acacacacct 2820
gctgctcagc acaattgctt cagcacctgc ttctgtccta caatgactcc agccccagtc 2880
ctgagtatac caggtacttg tccaggcaag tctatggcct ggtccatccg gtcaagctct 2940
actgcctgga cctctgtgta cactatcaat taaagttggt ttgttagctg tgaaaaaaaa 3000
aaaaaaaaaa aaaaaaaaaa 3020

<210> 293
<211> 266
<212> PRT
<213> Mouse

<400> 293

```
Met Met Lys Thr Leu Ser Ser Gly Asn Cys Thr Leu Asn Val Pro Ala
 1               5                  10                  15
Lys Asn Ser Tyr Arg Met Val Val Leu Gly Ala Ser Arg Val Gly Lys
            20                  25                  30
Ser Ser Ile Val Ser Arg Phe Leu Asn Gly Arg Phe Glu Asp Gln Tyr
        35                  40                  45
Thr Pro Thr Ile Glu Asp Phe His Arg Lys Val Tyr Asn Ile His Gly
    50                  55                  60
Asp Met Tyr Gln Leu Asp Ile Leu Asp Thr Ser Gly Asn His Pro Phe
65                  70                  75                  80
Pro Ala Met Arg Arg Leu Ser Ile Leu Thr Gly Asp Val Phe Ile Leu
                85                  90                  95
Val Phe Ser Leu Asp Ser Arg Glu Ser Phe Asp Glu Val Lys Arg Leu
            100                 105                 110
Gln Lys Gln Ile Leu Glu Val Lys Ser Cys Leu Lys Asn Lys Thr Lys
        115                 120                 125
Glu Ala Ala Glu Leu Pro Met Val Ile Cys Gly Asn Lys Asn Asp His
    130                 135                 140
```

```
Ser Glu Leu Cys Arg Gln Val Pro Ala Met Glu Ala Glu Leu Leu Val
145                 150                 155                 160
Ser Gly Asp Glu Asn Cys Ala Tyr Phe Glu Val Ser Ala Lys Lys Asn
                165                 170                 175
Thr Asn Val Asn Glu Met Phe Tyr Val Leu Phe Ser Met Ala Lys Leu
            180                 185                 190
Pro His Glu Met Ser Pro Ala Leu His His Lys Ile Ser Val Gln Tyr
        195                 200                 205
Gly Asp Ala Phe His Pro Arg Pro Phe Cys Met Arg Arg Thr Lys Val
    210                 215                 220
Ala Gly Ala Tyr Gly Met Val Ser Pro Phe Ala Arg Arg Pro Ser Val
225                 230                 235                 240
Asn Ser Asp Leu Lys Tyr Ile Lys Ala Lys Val Leu Arg Glu Gly Gln
                245                 250                 255
Ala Arg Glu Arg Asp Lys Cys Ser Ile Gln
            260                 265
```

<210> 294
<211> 5520
<212> DNA
<213> Mouse

<400> 294

```
gggcgcccgg gactcccgct gagcactcct cccgcacgcc cgggtccctc cggccggcga      60
gccgtccggc ccctgcgctg taggtccccg cggggcgatg ggttgatggg cgcgggggga     120
cgcaggatgc cggtgcctcc cgcgcgtttg ctgctgctgc cgctgctgcc ttgtcttctg     180
ctcctggctc ctggaactcg gggtgcgcct ggctgcccgg tccctatccg cggttgcaag     240
tgctctgggg agcggcccaa gggactaagt ggcggcgccc acaacccggc tcgaaggagg     300
gtggtgtgcg gcggtgggga tctccccgaa cctccagatc ccggccttct gccaaacggc     360
accatcacct tgctcttgag caacaacaag attactgggc tccgcaatgg atccttcttg     420
ggactgtccc tgttggagaa gttggacctg aggagcaatg tcatcagcac tgtgcagcct     480
ggagccttcc taggtctggg agagctaaaa cgcttagatc tctccaacaa tcggattggc     540
tgtctcacct ctgagacatt tcaagggctc cctagacttc tcagactaaa catatctgga     600
aacatctact ctagtctgca acctggggtc tttgatgagc tgccagccct taagattgtg     660
gactttggta ctgagtttct gacctgtgac tgccgcctgc gctggctgct gccctgggcc     720
cggaatcact ccctgcagct gtctgagcgc acactctgtg cctaccccag tgccctgcac     780
gcccatgccc tgagcagcct ccaggagtcc cagcttcgct gtgaaggggc cctggaactg     840
cacacccact acctcatccc atcccttcgc caagtggtgt tccagggtga ccgcctgccc     900
ttccagtgct cagccagcta cttgggcaac gatacccgga tccactggta ccacaatggg     960
gctcctatgg agagcgatga gcaggccggc atcgtccttg ctgaaaacct tatccatgat    1020
tgcaccttca tcaccagtga gctgaccctg tctcacattg gtgtgtgggc ctctggtgaa    1080
tgggagtgct ccgtgtccac agtccaaggc aacaccagca agaaggtgga gatagtagtg    1140
ctggagacct ctgcctccta ctgccctgca gagcgggtga ccaacaaccg tggggacttc    1200
aggtggcccc gaaccttggc tggcatcacg gcttaccagt cctgtttaca gtacccccttc    1260
acctctgtgc ccttgagtgg gggagccccg ggtacccgag cctcacgcag gtgtgaccga    1320
gctggccgct gggagccagg ggactactcg cactgtctgt acaccaatga catcactcgg    1380
gtgctctaca cctttgtgct gatgcccatc aacgcctcca atgcattgac gttggcccac    1440
cagctgcgag tgtataccgc agaggccgcc agcttctcag acatgatgga cgtggtctat    1500
gtggctcaga tgatccagaa gtttttgggt tacgttgacc agatcaagga gctggtggag    1560
gtgatggtgg acatggccag caacctgatg ctggtggatg agcaccttct gtggctggcc    1620
cagagagaag acaaagcctg cagtggcatt gtgggtgccc tggagcgaat cggaggagct    1680
gctcttagcc cccatgccca gcacatctct gtgaattcaa gaaatgtggc actggaggcc    1740
tacctcatca agcctcacag ctacgtgggt ctgacttgca cggctttcca gaggagggag    1800
gtaggagtgt cgggtgcaca gccaagcagc gtcggccagg atgccccagt ggagcccgaa    1860
cccctagctg atcagcagct taggttccgc tgcaccactg ggaggcccaa catttctctg    1920
tcatccttcc acatcaagaa tagcgtggcc ctggcctcca tccagctgcc ccccagcctg    1980
ttctcaaccc ttccggctgc cctggctccc ccagtccctc cagattgcac cctgcaactg    2040
ctggtcttca gaaatggccg tcttttccgc agccacggca acaacacttc ccgtcctgga    2100
gcagctgggc ctggcaagag gcgtggtgtg gccaccccag tcatatttgc aggaaccagt    2160
ggctgtggtg tgggaaactt gacggagccc gtggctgtgt cactgaggca ctgggctgaa    2220
ggagctgacc ccatggcagc ttggtggaac caggacgggc ctggaggctg gagttctgaa    2280
```

ggctgcaggc tccgctacag ccagcccaac gtcagctccc tgtactgcca gcacttgggc 2340
aatgtggccg tgcttatgga gctgaatgca ttcccgcggg aggcaggagg ctctggggct 2400
gggttgcatc ccgtcgtgta cccctgcacg gctttgctgc tactctgtct cttctccacc 2460
atcatcacgt acatcctcaa ccacagctcc atccacgtgt cccggaaggg ttggcacatg 2520
ctgctgaacc tttgtttcca tatggccatg acctctgctg tcttcgtggg gggcgtcacg 2580
ctcaccaact accaaatggt ttgtcaagcg gtgggcatca ctctgcacta ctcttccttg 2640
tcgtcactgc tctggatggg ggtcaaggct cgagtcctcc acaaggagct tagttggagg 2700
gcaccccctc tggaagaagg ggaagcagct ccgcctggtc ctcgccccat gctccggttc 2760
tacttgattg ctggagggat ccccctcata atctgcggca tcaccgctgc ggtcaacatc 2820
cacaactacc gggaccacag tccctattgt tggctggtgt ggcgtccaag ccttggtgcc 2880
ttctacatac cggtggcgtt gattctgcct atcacctgga tctacttctt gtgtgcaggc 2940
cttcacttac ggagccatgt ggcccagaat ccaaagcagg gtaacaggat ctctctggag 3000
ccaggggaag agctgagggg ttccaccagg ctcaggagta gtggcgtcct cctgaatgac 3060
tctggttctc ttttggctac agttagcgca ggagtaggga cacctgcgcc cccagaggat 3120
ggtgatggcg tatattctcc tggagtccag ctgggggcgc tgatgaccac gcatttcctg 3180
tacctggcta tgtgggcttg tggtgccttg gcggtgtctc agcgctggct gccccgagtg 3240
gtgtgtagct gtctgtacgg cgtggcagct tcagctcttg gtctgtttgt cttcactcac 3300
cactgtgcca gacgtagaga tgtccgggct tcctggcgcg cctgctgccc tcctgcttcg 3360
ccctcggcct cccatgtccc agcccgggcc ctgccgactg ctacagagga tggatcccca 3420
gtgttggggg agggaccagc ctctctcaag tcctccccaa gtggcagcag tggccgcgcg 3480
ccgccacccc cctgcaaact caccaatctg caggtggccc agagtcaggt gtgcgaggca 3540
agcgtggccg cccgcggaga tggagagcca gagcccaccg gctcccgtgg cagcctagct 3600
ccccggcacc ataacaacct gcatcatggg cgccgagtac acaagagtcg ggccaagggg 3660
caccgagccg gagagactgg tggtaagagc cggctcaagg cgttgcgcgc gggcacgtcc 3720
ccaggagctc ccgagctgtt gtccagtgag agcggcagtt tgcacaacag cccgtctgac 3780
agctacccgg gcagcagccg caacagtcca ggcgacggtc ttccactcga gggtgagccc 3840
atgcttacgc cgtcggaggg cagtgacaca agcgccgcgc caatcgctga gacggggcgc 3900
cccgggcagc gccgcagcgc cagccgtgac aacctcaagg gcagcggcag cgcgctggag 3960
agggagagca agcgccgctc ctatccgctc aacactacca gtcttaacgg tgcccccaaa 4020
gggggcaagt atgaggatgc cagtgtaact ggtgcagagg ccatagcggg aggctccatg 4080
aagactggcc tctggaaaag cgagaccacc gtctaggtcc agatttagga tgggcgggtc 4140
acgcgggctt gtttactccc aaatcctctt gggcggtcca agccgtctac tgatgtgtat 4200
gtaggtttaa ggcggccatg ctgatgctgc ccttgagtcc accatcatta gttacccagg 4260
ctagggaaag gggagggagg cagatgcttg cccctactgt ggactatccc tcagcagtag 4320
cgacagacaa tcccagacca gttttggtgg ccaagttctt ggtatcctgc caggtaggca 4380
taaaacatcc atcggtccct agggtaaccc ataaactgag ttgaagagcc cagcccaggt 4440
aggctcagga aatgagaggg agaccgggga actgggttct ccacaccagc ccggcaaggt 4500
atcctgtgac tgccaagatc ccaggcctct ctcccagttt tggcttggga aaccatccca 4560
gcaggtgagc caggggggcgt aacaggtgct gcctttcaga ttaactatgc aaggggggatg 4620
ggggtgggag gggtagggca gtgtggtggg cagctctaga gatgagcttg tccctcagga 4680
ggcaggcagg tgggaaaagg tgcattaggg agacagaatc cctaactatg ggagtggtac 4740
acagtttttc cagcagagtt cacagcaaac cctgaacccc cacacacctg ggaagtgata 4800
ctgccagcag gtgccttaag actcaagggg agggagctga tatgtggatc tcacaaccta 4860
tacagtggtc tgcaagtggc tccacttagc tgcttaatta taatacccac tgtctgttcc 4920
cagccctcca actccggggg actgagggga aatgcctcca tgaggctcct gtggcaaagc 4980
catgctaata atctgacttc taacctcagt tagaaaccca aaatgccaaa ccacctccta 5040
actcgctgaa acccaaccac actctgaggc agcgcctggg tccaggctgc tcaagagcct 5100
atgcttccag cccccatttt cctcaactca agatgccttt taatacagaa ctacatggaa 5160
gtagaggaac ccttgggcac tgggaagtag cagggatccc agctctgatc aagtgagagg 5220
acagagcagg gaagacgcca tactcgctga gatgggtccc attatttatg ctttgctgca 5280
cagacactat tagaggaaaa gctttgtatt actctcccac gtgagctgct gctgtttacc 5340
ctgccaatgc cttagcactg gagagctttt tgcaatatgc tggggaaagg ggagggaggg 5400
gatgaagtgc caaagaaaac acattttaaa agctctggtt ttatacaata gaatgttttc 5460
cagcagatgc ctctttgttt taatatatta aaatcttgca aaaaaaaaaa aaaaaaaaaa 5520

<210> 295
<211> 1329
<212> PRT

<213> Mouse

<400> 295

```
Met Pro Val Pro Pro Ala Arg Leu Leu Leu Leu Pro Leu Leu Pro Cys
 1               5                  10                  15
Leu Leu Leu Leu Ala Pro Gly Thr Arg Gly Ala Pro Gly Cys Pro Val
            20                  25                  30
Pro Ile Arg Gly Cys Lys Cys Ser Gly Glu Arg Pro Lys Gly Leu Ser
        35                  40                  45
Gly Gly Ala His Asn Pro Ala Arg Arg Arg Val Val Cys Gly Gly Gly
    50                  55                  60
Asp Leu Pro Glu Pro Pro Asp Pro Gly Leu Leu Pro Asn Gly Thr Ile
65                  70                  75                  80
Thr Leu Leu Leu Ser Asn Asn Lys Ile Thr Gly Leu Arg Asn Gly Ser
                85                  90                  95
Phe Leu Gly Leu Ser Leu Leu Glu Lys Leu Asp Leu Arg Ser Asn Val
            100                 105                 110
Ile Ser Thr Val Gln Pro Gly Ala Phe Leu Gly Leu Gly Glu Leu Lys
        115                 120                 125
Arg Leu Asp Leu Ser Asn Asn Arg Ile Gly Cys Leu Thr Ser Glu Thr
    130                 135                 140
Phe Gln Gly Leu Pro Arg Leu Leu Arg Leu Asn Ile Ser Gly Asn Ile
145                 150                 155                 160
Tyr Ser Ser Leu Gln Pro Gly Val Phe Asp Glu Leu Pro Ala Leu Lys
                165                 170                 175
Ile Val Asp Phe Gly Thr Glu Phe Leu Thr Cys Asp Cys Arg Leu Arg
            180                 185                 190
Trp Leu Leu Pro Trp Ala Arg Asn His Ser Leu Gln Leu Ser Glu Arg
        195                 200                 205
Thr Leu Cys Ala Tyr Pro Ser Ala Leu His Ala His Ala Leu Ser Ser
    210                 215                 220
Leu Gln Glu Ser Gln Leu Arg Cys Glu Gly Ala Leu Glu Leu His Thr
225                 230                 235                 240
His Tyr Leu Ile Pro Ser Leu Arg Gln Val Val Phe Gln Gly Asp Arg
                245                 250                 255
Leu Pro Phe Gln Cys Ser Ala Ser Tyr Leu Gly Asn Asp Thr Arg Ile
            260                 265                 270
His Trp Tyr His Asn Gly Ala Pro Met Glu Ser Asp Glu Gln Ala Gly
        275                 280                 285
Ile Val Leu Ala Glu Asn Leu Ile His Asp Cys Thr Phe Ile Thr Ser
    290                 295                 300
Glu Leu Thr Leu Ser His Ile Gly Val Trp Ala Ser Gly Glu Trp Glu
305                 310                 315                 320
Cys Ser Val Ser Thr Val Gln Gly Asn Thr Ser Lys Lys Val Glu Ile
                325                 330                 335
Val Val Leu Glu Thr Ser Ala Ser Tyr Cys Pro Ala Glu Arg Val Thr
            340                 345                 350
Asn Asn Arg Gly Asp Phe Arg Trp Pro Arg Thr Leu Ala Gly Ile Thr
        355                 360                 365
Ala Tyr Gln Ser Cys Leu Gln Tyr Pro Phe Thr Ser Val Pro Leu Ser
    370                 375                 380
Gly Gly Ala Pro Gly Thr Arg Ala Ser Arg Arg Cys Asp Arg Ala Gly
385                 390                 395                 400
Arg Trp Glu Pro Gly Asp Tyr Ser His Cys Leu Tyr Thr Asn Asp Ile
                405                 410                 415
Thr Arg Val Leu Tyr Thr Phe Val Leu Met Pro Ile Asn Ala Ser Asn
            420                 425                 430
Ala Leu Thr Leu Ala His Gln Leu Arg Val Tyr Thr Ala Glu Ala Ala
        435                 440                 445
Ser Phe Ser Asp Met Met Asp Val Val Tyr Val Ala Gln Met Ile Gln
    450                 455                 460
```

Lys Phe Leu Gly Tyr Val Asp Gln Ile Lys Glu Leu Val Glu Val Met
465 470 475 480
Val Asp Met Ala Ser Asn Leu Met Leu Val Asp Glu His Leu Leu Trp
485 490 495
Leu Ala Gln Arg Glu Asp Lys Ala Cys Ser Gly Ile Val Gly Ala Leu
500 505 510
Glu Arg Ile Gly Gly Ala Ala Leu Ser Pro His Ala Gln His Ile Ser
515 520 525
Val Asn Ser Arg Asn Val Ala Leu Glu Ala Tyr Leu Ile Lys Pro His
530 535 540
Ser Tyr Val Gly Leu Thr Cys Thr Ala Phe Gln Arg Arg Glu Val Gly
545 550 555 560
Val Ser Gly Ala Gln Pro Ser Ser Val Gly Gln Asp Ala Pro Val Glu
565 570 575
Pro Glu Pro Leu Ala Asp Gln Gln Leu Arg Phe Arg Cys Thr Thr Gly
580 585 590
Arg Pro Asn Ile Ser Leu Ser Ser Phe His Ile Lys Asn Ser Val Ala
595 600 605
Leu Ala Ser Ile Gln Leu Pro Pro Ser Leu Phe Ser Thr Leu Pro Ala
610 615 620
Ala Leu Ala Pro Pro Val Pro Pro Asp Cys Thr Leu Gln Leu Leu Val
625 630 635 640
Phe Arg Asn Gly Arg Leu Phe Arg Ser His Gly Asn Asn Thr Ser Arg
645 650 655
Pro Gly Ala Ala Gly Pro Gly Lys Arg Arg Gly Val Ala Thr Pro Val
660 665 670
Ile Phe Ala Gly Thr Ser Gly Cys Gly Val Gly Asn Leu Thr Glu Pro
675 680 685
Val Ala Val Ser Leu Arg His Trp Ala Glu Gly Ala Asp Pro Met Ala
690 695 700
Ala Trp Trp Asn Gln Asp Gly Pro Gly Gly Trp Ser Ser Glu Gly Cys
705 710 715 720
Arg Leu Arg Tyr Ser Gln Pro Asn Val Ser Ser Leu Tyr Cys Gln His
725 730 735
Leu Gly Asn Val Ala Val Leu Met Glu Leu Asn Ala Phe Pro Arg Glu
740 745 750
Ala Gly Gly Ser Gly Ala Gly Leu His Pro Val Val Tyr Pro Cys Thr
755 760 765
Ala Leu Leu Leu Leu Cys Leu Phe Ser Thr Ile Ile Thr Tyr Ile Leu
770 775 780
Asn His Ser Ser Ile His Val Ser Arg Lys Gly Trp His Met Leu Leu
785 790 795 800
Asn Leu Cys Phe His Met Ala Met Thr Ser Ala Val Phe Val Gly Gly
805 810 815
Val Thr Leu Thr Asn Tyr Gln Met Val Cys Gln Ala Val Gly Ile Thr
820 825 830
Leu His Tyr Ser Ser Leu Ser Ser Leu Leu Trp Met Gly Val Lys Ala
835 840 845
Arg Val Leu His Lys Glu Leu Ser Trp Arg Ala Pro Pro Leu Glu Glu
850 855 860
Gly Glu Ala Ala Pro Pro Gly Pro Arg Pro Met Leu Arg Phe Tyr Leu
865 870 875 880
Ile Ala Gly Gly Ile Pro Leu Ile Ile Cys Gly Ile Thr Ala Ala Val
885 890 895
Asn Ile His Asn Tyr Arg Asp His Ser Pro Tyr Cys Trp Leu Val Trp
900 905 910
Arg Pro Ser Leu Gly Ala Phe Tyr Ile Pro Val Ala Leu Ile Leu Pro
915 920 925
Ile Thr Trp Ile Tyr Phe Leu Cys Ala Gly Leu His Leu Arg Ser His
930 935 940
Val Ala Gln Asn Pro Lys Gln Gly Asn Arg Ile Ser Leu Glu Pro Gly

```
945                 950                 955                 960
Glu Glu Leu Arg Gly Ser Thr Arg Leu Arg Ser Ser Gly Val Leu Leu
                965                 970                 975
Asn Asp Ser Gly Ser Leu Leu Ala Thr Val Ser Ala Gly Val Gly Thr
            980                 985                 990
Pro Ala Pro Pro Glu Asp Gly Asp Gly Val Tyr Ser Pro Gly Val Gln
        995                 1000                1005
Leu Gly Ala Leu Met Thr Thr His Phe Leu Tyr Leu Ala Met Trp Ala
    1010                1015                1020
Cys Gly Ala Leu Ala Val Ser Gln Arg Trp Leu Pro Arg Val Val Cys
1025                1030                1035                1040
Ser Cys Leu Tyr Gly Val Ala Ala Ser Ala Leu Gly Leu Phe Val Phe
                1045                1050                1055
Thr His His Cys Ala Arg Arg Arg Asp Val Arg Ala Ser Trp Arg Ala
            1060                1065                1070
Cys Cys Pro Pro Ala Ser Pro Ser Ala Ser His Val Pro Ala Arg Ala
        1075                1080                1085
Leu Pro Thr Ala Thr Glu Asp Gly Ser Pro Val Leu Gly Glu Gly Pro
    1090                1095                1100
Ala Ser Leu Lys Ser Ser Pro Ser Gly Ser Ser Gly Arg Ala Pro Pro
1105                1110                1115                1120
Pro Pro Cys Lys Leu Thr Asn Leu Gln Val Ala Gln Ser Gln Val Cys
                1125                1130                1135
Glu Ala Ser Val Ala Ala Arg Gly Asp Gly Glu Pro Glu Pro Thr Gly
            1140                1145                1150
Ser Arg Gly Ser Leu Ala Pro Arg His His Asn Asn Leu His His Gly
        1155                1160                1165
Arg Arg Val His Lys Ser Arg Ala Lys Gly His Arg Ala Gly Glu Thr
    1170                1175                1180
Gly Gly Lys Ser Arg Leu Lys Ala Leu Arg Ala Gly Thr Ser Pro Gly
1185                1190                1195                1200
Ala Pro Glu Leu Leu Ser Ser Glu Ser Gly Ser Leu His Asn Ser Pro
                1205                1210                1215
Ser Asp Ser Tyr Pro Gly Ser Ser Arg Asn Ser Pro Gly Asp Gly Leu
            1220                1225                1230
Pro Leu Glu Gly Glu Pro Met Leu Thr Pro Ser Glu Gly Ser Asp Thr
        1235                1240                1245
Ser Ala Ala Pro Ile Ala Glu Thr Gly Arg Pro Gly Gln Arg Arg Ser
    1250                1255                1260
Ala Ser Arg Asp Asn Leu Lys Gly Ser Gly Ser Ala Leu Glu Arg Glu
1265                1270                1275                1280
Ser Lys Arg Arg Ser Tyr Pro Leu Asn Thr Thr Ser Leu Asn Gly Ala
                1285                1290                1295
Pro Lys Gly Gly Lys Tyr Glu Asp Ala Ser Val Thr Gly Ala Glu Ala
            1300                1305                1310
Ile Ala Gly Gly Ser Met Lys Thr Gly Leu Trp Lys Ser Glu Thr Thr
        1315                1320                1325
Val
```

<210> 296
<211> 2840
<212> DNA
<213> Mouse

<400> 296

```
cggggctgct ccctctgcag ccgccgccgc cgccgcgcag acccggaggt cgtccgcgcc      60
caccatgcga gctcagctct ggttgctgca gttgctgcta ctccgcgggg ccgcgcgcgc     120
gctcagtccc gcaacacccg caggtcacaa tgaaggtcaa gactctgcat ggactgccaa     180
gaggaccagg caaggctgga gtcggagacc ccgagagagc cccgcgcagg tgttgaagcc     240
aggcaagacc cagctaagcc aggacttggg tgggggctcc ctggccatcg acacacttcc     300
```

```
ggacaacagg actcgggtgg tggaggacaa ccataactac tacgtgtccc gtgtctacgg     360
ccctggtgag aaacaaagcc aggatctgtg ggtggacctg gctgtggcca accggagtca     420
tgtgaagatc cacaggatcc tctccagttc tcaccgacag gcttcaagag tggtcttgtc     480
ctttgatttc cctttctatg ggcatcctct gcggcagatc accatagcaa ccggaggctt     540
catcttcatg ggggacatgc tccaccggat gctcacagct acgcagtatg tggcacccct     600
gatggccaac ttcaaccccg gctactctga caactccacg gttgcttact ttgacaatgg     660
gaccgttttt gtggttcagt gggatcatgt ttacctccag gaccgggagg acaggggcag     720
cttcaccttc caggcggccc tacaccgaga tggccgcatt gtcttcggct acaaagagat     780
ccccatggct gtcctggata tcagctctgc ccagcaccct gtcaaggcag gcctgtccga     840
cgctttcatg attctcaatt catccccaga ggtgccagag tctcagagac ggaccatttt     900
cgaataccac cgtgtggaac tggactccag caagatcacc accacctcgg ccgtggagtt     960
caccccgttg ccaacctgcc tccagcatca gagttgcgac acctgcgtgt cctcgaatct    1020
aaccttcaac tgcagctggt gccatgtcct gcagaggtgt tccagtggct ttgaccgata    1080
ccgccaagaa tggctgacct acggctgtgc ccaggaggca gaaggcaaga catgcgagga    1140
cttccaggat gatagccact actcagcctc ccctgacagc tccttcagcc cctttaatgg    1200
cgactccact acctcttcct ccctcttcat tgacagcctc accacagaag atgacaccaa    1260
gttgaatccc tacgcagaag gagacggcct tccggaccac tcatctccga agtccaaggg    1320
tcctcccgtg cacctgggca ccatcgtggg tatcgtgctt gctgtactcc tggtagcggc    1380
catcatcctg gctgggattt acatcagtgg ccaccctaat tccaatgctg cactcttctt    1440
catcgagcgg agacctcacc actggccagc catgaagttc cataaccacc ccaaccactc    1500
tacctacacc gaggtagagc cctccgggca cgagaaggaa ggcttcgtgg aggccgagca    1560
gtgctgagag agcatcgggc cagagacctg gagatggcat gaaagacaag tcacagcaca    1620
gagaagtgat ttttttcct ggcttcctcg gagctggccc tgggccagga agacaagaca     1680
acagcttgtg gtgccaacac tacagtttgg tctgcacacc ccatttaaag ggggctcagt    1740
aatacaactg cgaaggctcc ttggggaaca ctgacctcaa gagttccctg tttcaatggg    1800
aggaggcttc gtttggggtc tctcagtggt ctgcagctat ggcggagccc ctgcccactg    1860
gagacagcct cctgtgttcc tcctgctcac tgaagcccac actgggccat tgcattccgg    1920
ggtctataga ttcaagagct ggtcttgcta gctatggagt cagtgccctt ggctccaaac    1980
tttgtggctt agaagcctga agaaggggat cccttccctc cgagagcgct taaccctgag    2040
atgcgctaac agagagaaaa gtaaccttgg ggaacttgca tttttctggc cttggtcctt    2100
tgcttcattg tttttttttgc agaggccggg gccaacatcc gagcactgta gcctgcagct    2160
cattctgtac cctgccctgc cctgcccctc agcctccacc ctgcaagctg gtcttgcatg    2220
gctgccagta atgagtgggg cccttactgt gccatgtgtc tggtgcctgc attactcgtt    2280
aacctgttct gttatcaacg gcagtagttt ccttcaaaga gggggacaat ttacctggct    2340
cctgttttaa cttggctgac cagagtcgag ttcttgtaac cattaaaaac aactaggggg    2400
ccgggtgtgg tggtgctcac actcaggagg ctgagctctg agatcaaggc cagcctggtc    2460
tacagagaga gcctgtcttg aagaaacaag acaaatgggg ggctagaggt ttccctgaga    2520
caccctgcc ttagcaaggg gctccagttg gatcccgttg aagcacggtg gccgcgaagg     2580
tagggcagag aaatctggta tgggagggag agaccttgac ctggaaagcg gcctccatct    2640
ctccagctct gcaaagagct ttgggaactg ggagttgacg ttcccacact cagcctggtt    2700
ttaagggact tctgtccccg tggtggacca ggacggcttc taaaggacaa tgaaaaccta    2760
gagctcacct tcatcccaaa gaagcgtcat cagcaaataa ataaggtata gccctcaaaa    2820
aaaaaaaaaa aaaaaaaaaa                                               2840
```

<210> 297
<211> 500
<212> PRT
<213> Mouse

<400> 297

```
Met Arg Ala Gln Leu Trp Leu Leu Gln Leu Leu Leu Leu Arg Gly Ala
 1               5                  10                  15
Ala Arg Ala Leu Ser Pro Ala Thr Pro Ala Gly His Asn Glu Gly Gln
            20                  25                  30
Asp Ser Ala Trp Thr Ala Lys Arg Thr Arg Gln Gly Trp Ser Arg Arg
        35                  40                  45
Pro Arg Glu Ser Pro Ala Gln Val Leu Lys Pro Gly Lys Thr Gln Leu
    50                  55                  60
Ser Gln Asp Leu Gly Gly Gly Ser Leu Ala Ile Asp Thr Leu Pro Asp
65                  70                  75                  80
Asn Arg Thr Arg Val Val Glu Asp Asn His Asn Tyr Tyr Val Ser Arg
```

```
                85                  90                  95
Val Tyr Gly Pro Gly Glu Lys Gln Ser Gln Asp Leu Trp Val Asp Leu
            100                 105                 110
Ala Val Ala Asn Arg Ser His Val Lys Ile His Arg Ile Leu Ser Ser
        115                 120                 125
Ser His Arg Gln Ala Ser Arg Val Val Leu Ser Phe Asp Phe Pro Phe
    130                 135                 140
Tyr Gly His Pro Leu Arg Gln Ile Thr Ile Ala Thr Gly Gly Phe Ile
145                 150                 155                 160
Phe Met Gly Asp Met Leu His Arg Met Leu Thr Ala Thr Gln Tyr Val
                165                 170                 175
Ala Pro Leu Met Ala Asn Phe Asn Pro Gly Tyr Ser Asp Asn Ser Thr
            180                 185                 190
Val Ala Tyr Phe Asp Asn Gly Thr Val Phe Val Val Gln Trp Asp His
        195                 200                 205
Val Tyr Leu Gln Asp Arg Glu Asp Arg Gly Ser Phe Thr Phe Gln Ala
    210                 215                 220
Ala Leu His Arg Asp Gly Arg Ile Val Phe Gly Tyr Lys Glu Ile Pro
225                 230                 235                 240
Met Ala Val Leu Asp Ile Ser Ser Ala Gln His Pro Val Lys Ala Gly
                245                 250                 255
Leu Ser Asp Ala Phe Met Ile Leu Asn Ser Ser Pro Glu Val Pro Glu
            260                 265                 270
Ser Gln Arg Arg Thr Ile Phe Glu Tyr His Arg Val Glu Leu Asp Ser
        275                 280                 285
Ser Lys Ile Thr Thr Thr Ser Ala Val Glu Phe Thr Pro Leu Pro Thr
    290                 295                 300
Cys Leu Gln His Gln Ser Cys Asp Thr Cys Val Ser Ser Asn Leu Thr
305                 310                 315                 320
Phe Asn Cys Ser Trp Cys His Val Leu Gln Arg Cys Ser Ser Gly Phe
                325                 330                 335
Asp Arg Tyr Arg Gln Glu Trp Leu Thr Tyr Gly Cys Ala Gln Glu Ala
            340                 345                 350
Glu Gly Lys Thr Cys Glu Asp Phe Gln Asp Asp Ser His Tyr Ser Ala
        355                 360                 365
Ser Pro Asp Ser Ser Phe Ser Pro Phe Asn Gly Asp Ser Thr Thr Ser
    370                 375                 380
Ser Ser Leu Phe Ile Asp Ser Leu Thr Thr Glu Asp Asp Thr Lys Leu
385                 390                 395                 400
Asn Pro Tyr Ala Glu Gly Asp Gly Leu Pro Asp His Ser Ser Pro Lys
                405                 410                 415
Ser Lys Gly Pro Pro Val His Leu Gly Thr Ile Val Gly Ile Val Leu
            420                 425                 430
Ala Val Leu Leu Val Ala Ala Ile Ile Leu Ala Gly Ile Tyr Ile Ser
        435                 440                 445
Gly His Pro Asn Ser Asn Ala Ala Leu Phe Phe Ile Glu Arg Arg Pro
    450                 455                 460
His His Trp Pro Ala Met Lys Phe His Asn His Pro Asn His Ser Thr
465                 470                 475                 480
Tyr Thr Glu Val Glu Pro Ser Gly His Glu Lys Glu Gly Phe Val Glu
                485                 490                 495
Ala Glu Gln Cys
            500
```

<210> 298
<211> 2010
<212> DNA
<213> Mouse

<400> 298
gagagaggtc gcggcagcgg catggcaagg ttccggaggg ccgacctggc cgcagcagga 60

```
gttatgttac tttgtcactt tttaacagac cggttccact tcgcccacgg ggagcctgga     120
caccatacca atgattggat ttatgaagtt acaaacgctt ttccttggaa tgaagagggg     180
gtagaagtgg actctcaagc atacaaccac aggtggaaaa gaaatgtgga ccctttaag      240
gcagtagaca caaacagagc cagcatgggc caagcctctc cagagtccaa agggttcact     300
gacctgctac tggatgacgg acaggacaat aacacccaga tagaggagga cacggatcac     360
aattactaca tttctcggat atatggtcca gcggattctg ccagccggga tctgtgggtt     420
aacatagacc aaatggaaaa agacaaagtg aagattcacg ggatactttc caacactcat     480
cggcaagctg caagagtgaa tctgtccttc gattttccat tttatggtca ttttctaaat     540
gaagtcactg tggcaactgg gggtttcata tatactggag aagttgtaca tcgaatgctc     600
acagctacac agtatatagc tcctttaatg gcaaattttg atcccagtgt atccagaaat     660
tcaactgtca gatattttga taatggcaca gctcttgttg tccagtggga ccatgtccac     720
ctgcaggata attacaacct gggaagcttc acattccagg ccacactcct catggacggg     780
cgcatcatct ttggatacaa agaaatccct gtcttggtca cacagataag ttctaccaac     840
catccagtga aagtcgggtt gtctgatgca tttgtcgtgg tccacaggat ccagcaaata     900
cccaatgttc gaagaagaac aatttatgaa tatcaccgag tagaactaca aatgtccaaa     960
attaccaaca tctcagctgt ggagatgact ccacttccca catgtctcca gttcaatggt    1020
tgtggccctt gtgtgtcctc gcagattggt ttcaactgca gttggtgcag caaacttcaa    1080
agatgctcca gtggatttga tcgccatcgg caggactggg tggacagtgg atgcccggaa    1140
gaggtacagt caaaagagaa gatgtgtgag aagacagagc caggagagac gtctcaaact    1200
accacgacct cccacacgac caccatgcaa ttcagggtcc tgaccaccac caggagagct    1260
gtgacatcgc agatgcctac cagcctgcct acagaagatg acacgaagat agccctacat    1320
ctcaaagaca gtggagcctc cacagatgac agtgcagctg agaagaaagg aggaaccctc    1380
catgcaggcc tcattgttgg aattctcatc ttggtcctca ttatagcagc ggccattctg    1440
gtgacagtgt atatgtatca ccatccaaca tcagcagcca gcatcttctt cattgagaga    1500
cgcccaagca gatggccagc aatgaagttt cgaagaggct caggacaccc tgcctatgca    1560
gaagttgaac cagttggaga gaaagaaggt tttattgtat cagagcagtg ctaaaatttt    1620
aggacagagc agcaccagta ctggcttaca ggtgttaaga ctaaaacttt gcttatgcat    1680
ttaagacaaa cagacacaca acccacaacc acacacaaag gagccctaaa ctgctgtaga    1740
cagaagggcg acgagatttc tggacaagcc cagcccagga acattgaaag gaaaactcag    1800
acttgtacaa gacaccatgt acaatgatta aagaattccc tagtggaatg acatccatgg    1860
ttcacaagga acatctccgg tggacttgcc aggagtgtga cgagatgacg atgcttttgg    1920
tttaggtgca gggttgcaaa gaaatcaagg aaaaaaaata tgacaataaa taaagcttta    1980
gttcacaagg gaaaaaaaaa aaaaaaaaaa                                     2010
```

<210> 299
<211> 530
<212> PRT
<213> Mouse

<400> 299

```
Met Ala Arg Phe Arg Arg Ala Asp Leu Ala Ala Ala Gly Val Met Leu
 1               5                  10                  15
Leu Cys His Phe Leu Thr Asp Arg Phe His Phe Ala His Gly Glu Pro
            20                  25                  30
Gly His His Thr Asn Asp Trp Ile Tyr Glu Val Thr Asn Ala Phe Pro
        35                  40                  45
Trp Asn Glu Glu Gly Val Glu Val Asp Ser Gln Ala Tyr Asn His Arg
    50                  55                  60
Trp Lys Arg Asn Val Asp Pro Phe Lys Ala Val Asp Thr Asn Arg Ala
65                  70                  75                  80
Ser Met Gly Gln Ala Ser Pro Glu Ser Lys Gly Phe Thr Asp Leu Leu
                85                  90                  95
Leu Asp Asp Gly Gln Asp Asn Asn Thr Gln Ile Glu Glu Asp Thr Asp
            100                 105                 110
His Asn Tyr Tyr Ile Ser Arg Ile Tyr Gly Pro Ala Asp Ser Ala Ser
        115                 120                 125
Arg Asp Leu Trp Val Asn Ile Asp Gln Met Glu Lys Asp Lys Val Lys
    130                 135                 140
Ile His Gly Ile Leu Ser Asn Thr His Arg Gln Ala Ala Arg Val Asn
145                 150                 155                 160
Leu Ser Phe Asp Phe Pro Phe Tyr Gly His Phe Leu Asn Glu Val Thr
```

```
                165                 170                 175
Val Ala Thr Gly Gly Phe Ile Tyr Thr Gly Glu Val Val His Arg Met
            180                 185                 190
Leu Thr Ala Thr Gln Tyr Ile Ala Pro Leu Met Ala Asn Phe Asp Pro
        195                 200                 205
Ser Val Ser Arg Asn Ser Thr Val Arg Tyr Phe Asp Asn Gly Thr Ala
    210                 215                 220
Leu Val Val Gln Trp Asp His Val His Leu Gln Asp Asn Tyr Asn Leu
225                 230                 235                 240
Gly Ser Phe Thr Phe Gln Ala Thr Leu Leu Met Asp Gly Arg Ile Ile
                245                 250                 255
Phe Gly Tyr Lys Glu Ile Pro Val Leu Val Thr Gln Ile Ser Ser Thr
            260                 265                 270
Asn His Pro Val Lys Val Gly Leu Ser Asp Ala Phe Val Val Val His
        275                 280                 285
Arg Ile Gln Gln Ile Pro Asn Val Arg Arg Arg Thr Ile Tyr Glu Tyr
    290                 295                 300
His Arg Val Glu Leu Gln Met Ser Lys Ile Thr Asn Ile Ser Ala Val
305                 310                 315                 320
Glu Met Thr Pro Leu Pro Thr Cys Leu Gln Phe Asn Gly Cys Gly Pro
                325                 330                 335
Cys Val Ser Ser Gln Ile Gly Phe Asn Cys Ser Trp Cys Ser Lys Leu
            340                 345                 350
Gln Arg Cys Ser Ser Gly Phe Asp Arg His Arg Gln Asp Trp Val Asp
        355                 360                 365
Ser Gly Cys Pro Glu Glu Val Gln Ser Lys Glu Lys Met Cys Glu Lys
    370                 375                 380
Thr Glu Pro Gly Glu Thr Ser Gln Thr Thr Thr Thr Ser His Thr Thr
385                 390                 395                 400
Thr Met Gln Phe Arg Val Leu Thr Thr Thr Arg Arg Ala Val Thr Ser
                405                 410                 415
Gln Met Pro Thr Ser Leu Pro Thr Glu Asp Asp Thr Lys Ile Ala Leu
            420                 425                 430
His Leu Lys Asp Ser Gly Ala Ser Thr Asp Asp Ser Ala Ala Glu Lys
        435                 440                 445
Lys Gly Gly Thr Leu His Ala Gly Leu Ile Val Gly Ile Leu Ile Leu
    450                 455                 460
Val Leu Ile Ile Ala Ala Ala Ile Leu Val Thr Val Tyr Met Tyr His
465                 470                 475                 480
His Pro Thr Ser Ala Ala Ser Ile Phe Phe Ile Glu Arg Arg Pro Ser
                485                 490                 495
Arg Trp Pro Ala Met Lys Phe Arg Arg Gly Ser Gly His Pro Ala Tyr
            500                 505                 510
Ala Glu Val Glu Pro Val Gly Glu Lys Glu Gly Phe Ile Val Ser Glu
        515                 520                 525
Gln Cys
    530
```

<210> 300
<211> 5220
<212> DNA
<213> Mouse

<400> 300

```
cggaactgct tcgactgcaa agcttcaagc gcagcctggg agcggcctgg tggccctatc      60
ccggcagctc cacacagcag aacgccctgg gtccctgaaa ctcgaaaccc gggctcagaa     120
ccagcggaaa ccaaagcgaa atccttgaac ttctctgaac aattgcttcc gggcgtttgc     180
tgagagccgg gggacctgac cggagcccag gccgcgtatg gcgcgcccct gatgtcacac     240
ggacgccagc gaggccagcg ctccggctgc agcatggacc gcgcggggcg cctgggtgcg     300
ggcctgcggg gactctgcgt ggctgcactc gtgctcgtgt gcgccggaca cgggggccgc     360
cgcgaggatg ggggaccagc ttgctacgga ggattcgacc tctacttcat cctggacaag     420
```

tcaggaagtg tgctgcacca ctggaatgaa atctactact tcgtggagca gttggctcat 480
agattcatca gcccacagct aaggatgtcc ttcattgtct tctctactcg agggacaact 540
ttaatgaaac taactgagga cagggaacag atccgacaag gcctagaaga gctccagaaa 600
gttctgccag gaggagacac ttacatgcac gaaggattcg agagggccag tgagcagatt 660
tactatgaga acagtcaagg atacaggacg gcgagcgtca tcatcgcgtt gacggatggg 720
gagctgcacg aggacctctt cttctactca gagagggagg ctaaccgatc ccgagacctt 780
ggtgcgattg tttactgcgt tggcgtgaag gatttcaatg aaactcagtt ggctcggatt 840
gcagacagta aggaccacgt gtttcctgtg aacgacggct tccaggctct ccaaggcatt 900
atccactcaa ttttaaagaa atcctgcatc gaaattctgg cggctgaacc atccaccatc 960
tgcgcgggag agtcctttca agtggtcgta agaggaaatg gcttccgaca tgcccgcaat 1020
gtggacaggg tcctctgcag cttcaaaatc aatgactcag tcacgctcaa tgagaagccc 1080
tttgctgtgg aagacactta tttgctgtgc ccagcaccaa tcttgaaaga agttggcatg 1140
aaagctgcac tgcaggtcag catgaacgac ggcctgtcct tcatctccag ttctgtcatc 1200
atcaccacca cacactgttc agacggctcc atcctggcga ttgctctgct ggtcctcttc 1260
ctgctgctgg ccctggcgct gctctggtgg ttctggcccc tctgctgcac agtgatcatc 1320
aaggaggtcc ctccaccccc tgttgaggag agtgaggaag aagacgatga tggtttgcca 1380
aagaagaaat ggcccacagt agatgcctct tattatggtg gacgcggtgt gggaggcatt 1440
aaaagaatgg aggtccgctg gggagaaaag ggctccacag aagaaggggc gaagttagaa 1500
aaggcaaaga atgcacgagt caagatgcca gagcaagaat atgagttccc agaaccccga 1560
aacctcaaca acaacatgcg ccggccttcc tcgcctcgga agtggtactc gcccatcaag 1620
ggaaaactcg atgccttgtg ggttctgctg agaaaaggat atgaccgagt gtctgtgatg 1680
aggccacagc caggagacac gggacgctgt atcaacttca ccagagtgaa gaacagtcag 1740
ccagccaagt atcccctgaa caacacctac caccccagct ccccacctcc cgctcctatc 1800
tacacacccc caccccctgc tccccactgc cctcccccag cccccagtgc ccccactcct 1860
cccattcctt ccccaccatc cactctcccc cctcctcctc aggccccacc ccctaacagg 1920
gcacctcccc cctcccgacc tcctccaagg ccttctgtct agaacccaaa gtccgagctc 1980
tgggctgcct gagcaactcc agcaggaggc ttctctgctg aaagaaagat ctgcccagcc 2040
tatgtggtga gtggcggctg atgtttgcac gatttaaaag caagtcgtga tgggcagaac 2100
aaaatgggca ttttgaactg cctgaagaca gacaatgaga caataacagt cacattatag 2160
cctgtgaccc ctcacctcta gaggaaggtt cccgagatgg ccacattgcc acagtgctct 2220
cagccagatt atgtcccatg aagaccagga agaaagtgac ttccaagaat ggaatgcagc 2280
attggataag aaacacctgg ctgagattct gacctcactg atttgactct tgattcttgg 2340
actgggagcc aggccatctc caccctggt accacccagc aactctgaaa atgtgcagtg 2400
tccctagtat gcatcgaata ggtatccaac tgggatctgc aggttgcctt ataaagagca 2460
tatgctctat tctctttccc gaacttcctg gtttcccagt gatgagggaa ggggaaaggt 2520
gttgccatgc ttagaagtta gaggacgtca gtgctcagca ctgatggaga agcgttgatg 2580
ggagtgtcca gctcttacat ctagaaatgg ctggcttcag caggcacagt tcctaaacca 2640
acaagccttg tcattgtcaa aggcaaccta ctaatgattc accttaaaca tcaaggttga 2700
ctgtggcata ggtcagagct gatcacacag aaccttcccc atgaaatcgc aaggttcctc 2760
atcttcaaat acccaggacc ccagagattt ctaaatccag ctaagagaca gtagtcctga 2820
cttggcaaga aaaccattcc cagttgtttt actctgaaac aggccgttgt atgtatggta 2880
tatctctcct tggcctttca acctgctcac aagtattacc agttatgaag caaggagaaa 2940
tacatccagt gtgtaataga aaagctctgc ccacaatccc catgtcactc ctctacatta 3000
ttctgaagct gcttggtcag tgagcccttt aacctcatgt agactctgga cactgtcacc 3060
caatcatgaa aacagaggtc attgtcaaag gcagtgtata gcctgtacaa aaatgatgct 3120
tccttcctca gtttccacag gccccaaaat tcctgtctta ggctcctaaa cctctaaact 3180
ttttcctgga acaaaagata taaaacgggc ataagttttt atgttttggg ctgtgatctc 3240
caaagatcct tcaagaactc aagttagcct cattcttcca gcttgtttag aacagaggca 3300
tccaggtgtc atgcactcca tagacaccaa tccttgttcc caaggcagac attattaatc 3360
aatctcagca ctagttctca atttaatcca attatatttt tccacagtac ttcacatctc 3420
ttatgacctg ttggtcatca gttagaattg agagagataa acactgtttg taatccctac 3480
cttagaaaga aaagcagagg agaatggggg aaccaccagc ataaaagtta ttatctgggg 3540
aaaatcgacc tgaaagaacg cccaagtcca agacctatgg tgctgacacc aaagtaacac 3600
tttcccaagt gtaccccaga ccccactctt ctccctgtgg ccaccactcc ctgcttttca 3660
ggagttgtga aaaagatctc cttcaccctt actgtgcccc catattagaa caaggcttgt 3720
ttagtgtagt ccttgttaaa caggtgccag aatgtctcag ccacctgaga tgacattgct 3780
gggccccaga aaaccattcc aaggagaatg ggctccccag gctcagagca tgcaactatg 3840
agcccatggc aactgttttg actgctggca gtacaaaacg ggccacccca cattacagct 3900
gcaggatttg tgcagccata agaaagtatg aaccaagatg ctggtgttgc tgttcaacaa 3960
gcatgggctt cggggaaggc agcagactcc gagagcaggc cttgtgcagt gtcccaaggg 4020
gctgtggtga agtgtctgag gaaaaatgaa tgctgataca tggtgattct gagaagaatt 4080

```
tgcaaggttt gaccttagaa tttatggaat gtcttccctg gtcattcaga attatggcta    4140
gaagtttcta gaaaccgtca aggttaatac ctttcagagt aggtgattac aggcaggaag    4200
agctttgatg tggtttacaa agcccatcag ttctgtgtca ttccctgtaa gcaacaggag    4260
atggtggttg tgattagcaa actgcatgtg ttatttgttt gactccttgt tattgtcctt    4320
acggaggatt ttttttatat aagccaaatt ttgttgtata tattcatatt ccacgtgaca    4380
gatggaagca cgtcctatca gtgtgaataa aaagaacagt tgtagtaaat tattaaagcc    4440
agtgatttca tggcaggtta ccctaccaag ctgtgcttgt tgatctccca tgaccatact    4500
gcttttacaa tgtacaaata gttcctaggt gacgagaccc tcctttacat aatgccgatg    4560
acagccttgc tgggaactgc ggtccttctg ctgtgacagc cagctcgaaa acaggtcctg    4620
cctggagctt gccacacact ttagggagac ataagagctg tctttcccca gcgtcaggga    4680
caaagctacc ataaagaagt ggaaaagtct tggctctcca gcctgggaca gaggtctctc    4740
tggaacccca aggaagagca gaaatgatcc ttgcctgcca ctgcacacaa tgtgatggtg    4800
gaaaatccat caaggaataa ttgtgagata atgaccgaca gttcaggcgc aaagggaatt    4860
catgctgtgt aaagtgggtg gaattcgttt gcaagctatg caaagcctga tcttactcac    4920
caggaggatg gaaagggttt ttttagttat ctgagctcag ctgagttatc acgcttggag    4980
aaccgattta aaggaattag aatatgattt ctgaatacac ataacattaa actcttctct    5040
ttttctatgg taatttagtt atggacgttc agcgtctctg agttattgtt ataaaagact    5100
tgtcatcacc gcactgtgct gtaggagact gggctgaacc tgtacaatgg tataccctgg    5160
aagttgcttt tttaaaaaaa aataataata aacacctaaa atcaaaaaaa aaaaaaaaaa    5220
```

<210> 301
<211> 562
<212> PRT
<213> Mouse

<400> 301

```
Met Asp Arg Ala Gly Arg Leu Gly Ala Gly Leu Arg Gly Leu Cys Val
 1               5                  10                  15
Ala Ala Leu Val Leu Val Cys Ala Gly His Gly Gly Arg Arg Glu Asp
            20                  25                  30
Gly Gly Pro Ala Cys Tyr Gly Gly Phe Asp Leu Tyr Phe Ile Leu Asp
        35                  40                  45
Lys Ser Gly Ser Val Leu His His Trp Asn Glu Ile Tyr Tyr Phe Val
    50                  55                  60
Glu Gln Leu Ala His Arg Phe Ile Ser Pro Gln Leu Arg Met Ser Phe
65                  70                  75                  80
Ile Val Phe Ser Thr Arg Gly Thr Thr Leu Met Lys Leu Thr Glu Asp
                85                  90                  95
Arg Glu Gln Ile Arg Gln Gly Leu Glu Glu Leu Gln Lys Val Leu Pro
            100                 105                 110
Gly Gly Asp Thr Tyr Met His Glu Gly Phe Glu Arg Ala Ser Glu Gln
        115                 120                 125
Ile Tyr Tyr Glu Asn Ser Gln Gly Tyr Arg Thr Ala Ser Val Ile Ile
    130                 135                 140
Ala Leu Thr Asp Gly Glu Leu His Glu Asp Leu Phe Phe Tyr Ser Glu
145                 150                 155                 160
Arg Glu Ala Asn Arg Ser Arg Asp Leu Gly Ala Ile Val Tyr Cys Val
                165                 170                 175
Gly Val Lys Asp Phe Asn Glu Thr Gln Leu Ala Arg Ile Ala Asp Ser
            180                 185                 190
Lys Asp His Val Phe Pro Val Asn Asp Gly Phe Gln Ala Leu Gln Gly
        195                 200                 205
Ile Ile His Ser Ile Leu Lys Lys Ser Cys Ile Glu Ile Leu Ala Ala
    210                 215                 220
Glu Pro Ser Thr Ile Cys Ala Gly Glu Ser Phe Gln Val Val Val Arg
225                 230                 235                 240
Gly Asn Gly Phe Arg His Ala Arg Asn Val Asp Arg Val Leu Cys Ser
                245                 250                 255
```

```
Phe Lys Ile Asn Asp Ser Val Thr Leu Asn Glu Lys Pro Phe Ala Val
            260                 265                 270
Glu Asp Thr Tyr Leu Leu Cys Pro Ala Pro Ile Leu Lys Glu Val Gly
        275                 280                 285
Met Lys Ala Ala Leu Gln Val Ser Met Asn Asp Gly Leu Ser Phe Ile
    290                 295                 300
Ser Ser Ser Val Ile Ile Thr Thr Thr His Cys Ser Asp Gly Ser Ile
305                 310                 315                 320
Leu Ala Ile Ala Leu Leu Val Leu Phe Leu Leu Leu Ala Leu Ala Leu
                325                 330                 335
Leu Trp Trp Phe Trp Pro Leu Cys Cys Thr Val Ile Ile Lys Glu Val
            340                 345                 350
Pro Pro Pro Pro Val Glu Glu Ser Glu Glu Glu Asp Asp Asp Gly Leu
        355                 360                 365
Pro Lys Lys Lys Trp Pro Thr Val Asp Ala Ser Tyr Tyr Gly Gly Arg
    370                 375                 380
Gly Val Gly Gly Ile Lys Arg Met Glu Val Arg Trp Gly Glu Lys Gly
385                 390                 395                 400
Ser Thr Glu Glu Gly Ala Lys Leu Glu Lys Ala Lys Asn Ala Arg Val
                405                 410                 415
Lys Met Pro Glu Gln Glu Tyr Glu Phe Pro Glu Pro Arg Asn Leu Asn
            420                 425                 430
Asn Asn Met Arg Arg Pro Ser Ser Pro Arg Lys Trp Tyr Ser Pro Ile
        435                 440                 445
Lys Gly Lys Leu Asp Ala Leu Trp Val Leu Leu Arg Lys Gly Tyr Asp
    450                 455                 460
Arg Val Ser Val Met Arg Pro Gln Pro Gly Asp Thr Gly Arg Cys Ile
465                 470                 475                 480
Asn Phe Thr Arg Val Lys Asn Ser Gln Pro Ala Lys Tyr Pro Leu Asn
                485                 490                 495
Asn Thr Tyr His Pro Ser Ser Pro Pro Pro Ala Pro Ile Tyr Thr Pro
            500                 505                 510
Pro Pro Pro Ala Pro His Cys Pro Pro Pro Ala Pro Ser Ala Pro Thr
        515                 520                 525
Pro Pro Ile Pro Ser Pro Pro Ser Thr Leu Pro Pro Pro Pro Gln Ala
    530                 535                 540
Pro Pro Pro Asn Arg Ala Pro Pro Pro Ser Arg Pro Pro Pro Arg Pro
545                 550                 555                 560
Ser Val
```

<210> 302
<211> 2690
<212> DNA
<213> Mouse

<400> 302

```
agctttcccc accacagaat ccaagtcgga actcttggca ccatgaaccc agccatcagc      60
gtcgctctcc tgctctcagg tactgggcaa gggtcagggc tggcattcta aggaatctgg     120
cttcctccca tcccgggaag tagcctcttt gccatagtct caggggcaca ggtggttggg     180
aggtgcgggg gtggggagtg gggaggagcc tcaacctcac cagtggtggt ctttgacata     240
ttagaaactc cataatggat ctaggaactc ctctgctggg tggtggtggt tgtggtacac     300
acctttaatc tcagcactca ggaggcagag tcaggtggat ctgttagtct gaagccagct     360
ggtctacaga gcaaattcca ggacagccag agctattctc aagatagaga atccctttct     420
tgaaaaaacc atttaaaaac aaaaacaaaa gcaacacact cctttgatct cctgttcttg     480
aaacacattg ttgggaccca gaacttcagt agattgatgg aagttggagt ctgcaagtgg     540
tggaacatcc caccaatacc tcaagggcga gtgcaaaccc cacatccccc cagctcaagc     600
tcacttttcc tgcaggtggg aggcccgggt ctgtgtctcc ccaaattcag agaaggcact     660
gctgtgcagt cttgcaggtg tcccgagggc agaaggtgac cagcctgaca gcctgcctgg     720
tgaaccaaaa ccttcgcctg gactgccgcc atgagaataa caccaaggat aactccatcc     780
agcatgagtt cagcctgacc cgagagaaga ggaagcacgt gctctcaggc acccttggga     840
```

```
tacccgagca cacgtaccgc tcccgcgtca ccctctccaa ccagccctat atcaaggtcc     900
ttaccctagc caacttcacc accaaggatg agggcgacta cttttgtgag cttcaagtct     960
cgggcgcgaa tcccatgagc tccaataaaa gtatcagtgt gtatagaggt gagactggtt    1020
cccagaaaga taaaatgtct aggttagcta ggctggggta gccaataaaa aaaaaaaaaa    1080
aaaaaaaaaa aaaaacaggc acctccatta cccttcccct aactgctggt ctcctgggaa    1140
actgctgctg tctatgtgag tggggcaaga ttaggggcca gaaaggggga gcttgtagta    1200
aaagcacagt tgaggaaact aaatgggaaa ggcagtacag tggtgattct tgtggtgtgg    1260
aggttctgtt acagcatccg gtggagccgc taagatgaga aagcgccagc tagctgcctt    1320
gaacagctga cacctgtctt tgcccgcctg agtcctgatc tcccctcctc ccggcacccc    1380
ttctctatcc acagacaagc tggtcaagtg tggcggcata agcctgctgg ttcagaacac    1440
atcctggatg ctgctgctgc tgctttccct ctccctcctc caagccctgg acttcatttc    1500
tctgtgactg gttgggccca aggagaaaca ggggccctcg aggagcccct cgggtccttc    1560
ctctgcagag gtcttgcttc tcccggtcag ctgactccct ccccaagtcc ttccaatatc    1620
tcagaacatg gggagaaacg gggaccttgt ccctcctaag gaaccccagt gctgcatgcc    1680
atcatccccc ccaccctcgc ccccacccca gccacttctc cctccatgca taccactagc    1740
tgtcattttg tactctgtat ttattctagg gctgcttctg attatttagt ttgttctttc    1800
cctggagacc tgttagaaca taagggcgta tggtgggtag gggaggcagg atatcagtcc    1860
ctggggcgag ttcctccctg ccaaggaagc cagatgcctg aaagagatat ggatgaggga    1920
agttggactg tgcctgtacc tggtacagtc atactctgtg gggaatcatc ggggaggggg    1980
gggggctca agatgggaga gctctgctag cctttgtgga ccatccaatg aggatgaggg    2040
cttagattct accaggtcat tctcagccac cacacacaag cgctctgcca tcactgaaga    2100
agccccctag ggccttgggc cagggcacac tcagtaaaga tgcaggttca gtcagggaat    2160
gatggggaaa ggggtaggag gtgggggagg gatcaccccc tcctctaaaa cacgagcctg    2220
ctgtctccaa aggcctctgc ctgtagtgag ggtggcagaa gaagacaagg agccagaact    2280
ctgactccag gatctaagtc cgtgcaggaa ggggatccta gaaccatccg gttggaccca    2340
gcttaccaag ggagagcctt tattcttctt tccctctgcc cctctgtgcc agcccctctt    2400
gctgtccctg atccccagac agacgagagt cttgcaaaca gcctgttcca agacctccta    2460
atctcagggg caggcggtgg agctgagatc cggcgtgcac acttttggt tgatagcttt     2520
cccaaggatc ctctccccca ctggcagctc tgcctgtccc atcaccatgt ataataccac    2580
cactgctaca gcatctcacc gaggaaagaa aaatgcacaa taaaaccaag cctctggagt    2640
gtgtcctggt gtctgtctct tctgtgtcct ggcgtctgtc tcttctgtgt                2690
```

<210> 303
<211> 162
<212> PRT
<213> Mouse

<400> 303

```
Met Asn Pro Ala Ile Ser Val Ala Leu Leu Leu Ser Val Leu Gln Val
 1               5                  10                  15
Ser Arg Gly Gln Lys Val Thr Ser Leu Thr Ala Cys Leu Val Asn Gln
            20                  25                  30
Asn Leu Arg Leu Asp Cys Arg His Glu Asn Asn Thr Lys Asp Asn Ser
        35                  40                  45
Ile Gln His Glu Phe Ser Leu Thr Arg Glu Lys Arg Lys His Val Leu
    50                  55                  60
Ser Gly Thr Leu Gly Ile Pro Glu His Thr Tyr Arg Ser Arg Val Thr
65                  70                  75                  80
Leu Ser Asn Gln Pro Tyr Ile Lys Val Leu Thr Leu Ala Asn Phe Thr
                85                  90                  95
Thr Lys Asp Glu Gly Asp Tyr Phe Cys Glu Leu Gln Val Ser Gly Ala
            100                 105                 110
Asn Pro Met Ser Ser Asn Lys Ser Ile Ser Val Tyr Arg Asp Lys Leu
        115                 120                 125
Val Lys Cys Gly Gly Ile Ser Leu Leu Val Gln Asn Thr Ser Trp Met
    130                 135                 140
Leu Leu Leu Leu Leu Ser Leu Ser Leu Leu Gln Ala Leu Asp Phe Ile
145                 150                 155                 160
Ser Leu
```

<210> 304
<211> 4588
<212> DNA
<213> Mouse

<400> 304

tgcgatcccc tcgccggcgg tcatccgagc acagcgctag ggctgtctct gcacgcagcc 60
ctgccgtgcg ccctccgtac tctcgtcctc cgagcgccgc agggatggta cccatccgac 120
ctgccctcgc gccctggcct cgtcacctgc tgcgctgcgt cttgcttctc gggggactgc 180
gtctcggcca cccggcggac tccgccgccg ccctcctgga gcctgatgtc ttcctcatct 240
tcagccaggg gatgcagggc tgtctggagg cccagggtgt gcaggtccga gtcaccccat 300
tctgcaatgc cagtctccct gcccagcgct ggaagtgggt ctcccggaac cgactcttca 360
acctgggtgc cacacagtgc ctgggtacag gctggccagt caccaacacc acagtttcct 420
tgggcatgta tgagtgtgac agagaggcct tgagtcttcg gatggcagtg tcgtacacta 480
ggggaccagt tgtccctgct tctgggggct cgtgcaagca atgcatccaa gcctggcacc 540
tggagcgcgg tgaccagacc cgcagtggcc attggaacat ctatggcagt gaagaagacc 600
tatgtgctcg accttactat gaggtctaca ccatccaggg aaactcacac ggaaagccgt 660
gcactatccc cttcaaatac gacaaccagt ggttccacgg ctgcaccagc actggcagag 720
aagatgggca cctgtggtgt gccaccaccc aggactacgg caaagatgag cgctggggct 780
tctgccccat caagagtaac gactgtgaga ccttctggga caaagaccag ctgactgaca 840
gctgttacca gtttaacttc caatccacac tgtcctggag ggaggcctgg gccagctgcg 900
agcagcaggg tgcagacttg ctgagtatca cggagatcca cgagcagacc tacatcaacg 960
ggctcctcac gggctacagc tccacgctat ggattggcct taatgacctg gataccagtg 1020
gaggctggca gtggtcagac aactcacccc tcaagtacct caactgggag agtgatcagc 1080
cggacaaccc aggtgaggag aactgtggag tgatccggac tgagtcctca ggcggctggc 1140
agaaccatga ctgcagcatc gccctgccct atgtttgcaa gaagaaaccc aacgctacgg 1200
tcgagcccat ccagccagac cggtggacca atgtcaaggt ggaatgtgac cccagctggc 1260
agcccttcca gggccactgc taccgcctgc aggccgagaa gcgcagctgg caggagtcca 1320
agagggcgtg tctgcggggt gggggtgacc tccttagcat ccacagcatg gctgagctgg 1380
agttcatcac caaacagatc aagcaagagg tggaggagct atggattggc ctcaatgatt 1440
tgaaactgca gatgaatttt gagtggtccg acgggagcct cgtgagcttc acccactggc 1500
acccctttga gcccaacaac tttcgtgaca gcctggagga ctgtgtcacc atctgggggc 1560
cggaaggacg ctggaacgac agtccctgta accagtcctt gccatccatt tgcaagaagg 1620
caggccggct gagccagggc gctgcggagg aggaccacga ctgccggaag ggttggacgt 1680
ggcatagccc atcctgctac tggctgggag aggaccaagt gatctacagt gatgcccggc 1740
gcctgtgtac tgaccatggc tctcagctgg tcaccatcac caacaggttt gagcaggcct 1800
tcgtcagcag cctcatctat aactgggagg gcgaatactt ctggacagcc ctgcaagacc 1860
tcaacagtac tggctccttc cgttggctca gtggggatga agtcatatat acccattgga 1920
atcgagacca gcctgggtac agacgtggag gctgtgtggc tctggccact ggcagtgcca 1980
tgggactgtg ggaggtgaag aactgcacat cgttccgggc tcgctacatc tgccgacaga 2040
gcctgggcac accggtcaca ccagagctgc ctgggccaga ccccacgccc agcctcactg 2100
gctcctgtcc ccagggctgg gtctcagacc ccaaactccg acactgctat aaggtgttca 2160
gctcagagcg gctgcaggag aagaagagtt ggatccaggc cctgggggtc tgccgggagt 2220
tgggggccca gctgctgagt ctggccagct atgaggagga gcactttgtg gcccacatgc 2280
tcaacaagat ctttggtgag tcagagcctg agagccatga gcagcactgg ttttggattg 2340
gcctgaaccg cagagaccct agagagggtc acagctggcg ctggagcgac ggtctagggt 2400
tttcctacca caattttgcc cggagccgac atgatgacga tgatatccga ggctgtgcag 2460
tgctggacct ggcctccctg cagtgggtac ccatgcagtg ccagacgcag cttgactgga 2520
tctgcaagat ccctagaggt gtggatgtgc gggaaccaga cattggtcga caaggccgtc 2580
tggagtgggt acgctttcag gaggccgagt acaagttttt tgagcaccac tcctcgtggg 2640
cgcaggcaca gcgcatctgc acctggttcc aggcagatct gacctccgtt cacagccaag 2700
cagaactggg cttcctgggg caaaacctgc agaagctgtc ctcagaccag gagcagcact 2760
ggtggatcgg cctgcacacc ttggagagtg acggacgctt caggtggaca gatggttcta 2820
ttataaactt catctcttgg gcaccgggaa aacctagacc cattggcaag gacaagaagt 2880
gtgtatacat gacagccaga caagaggact ggggggacca gaggtgccat acggctttgc 2940
cctacatctg taagcgcagc aatagctctg gagagactca gccccaagac ttgccacctt 3000
cagccttagg aggctgcccc tccggttgga accagttcct caataagtgt ttccgaatcc 3060
agggccagga cccccaggac agggtgaaat ggtcagaggc acagttctcc tgtgaacagc 3120
aagaagccca gctggtcacc attgcaaacc ccttagagca agcatttatc acagccagcc 3180
tccccaacgt gacctttgac ctttggattg gcctgcatgc ctctcagagg gacttccagt 3240
ggattgaaca agaaccccctg ctctatacca actgggcacc aggagagccc tctggcccca 3300

gccctgctcc cagtggcacc aagccgacca gctgtgcggt gatcctgcac agcccctcag 3360
cccacttcac tggccgctgg gatgatcgga gctgcacaga ggagacgcat ggcttcatct 3420
gccagaaggg cacagacccc tcgctaagcc catccccagc agcaacaccc cctgccccgg 3480
gcgctgagct ctcctatctc aaccacacct tccggctgct gcagaagcca ctgcgctgga 3540
aagatgctct cctgctgtgt gagagccgaa atgccagcct ggcacacgtg cccgatccct 3600
acacacaagc cttcctcaca caggctgcac gggggctgca aacaccactg tggatcgggc 3660
tggccagtga ggagggctca cggaggtatt cctggctctc agaggagcct ctgaattatg 3720
tgagctggca agatgaggag ccccagcact cgggaggctg tgcctacgtg gatgtggatg 3780
gaacctggcg caccaccagc tgtgatacca agctgcaggg ggcagtgtgt ggggtgagca 3840
gggggccccc accccgaagg ataaactacc gtggcagctg tcctcagggc ttggctgact 3900
cgtcctggat tcccttcagg gagcattgct attctttcca catggaggtg ctgttgggcc 3960
acaaggaggc gctgcagcgc tgtcagaaag ctggtgggac ggttctgtcc attcttgatg 4020
agatggagaa tgtgtttgtc tgggagcacc tgcagacagc tgaagcccaa agtcgaggtg 4080
cctggttggg catgaacttc aaccccaaag gaggcacgct ggtctggcaa gacaacacag 4140
ctgtgaacta ttctaactgg gggccccctg gcctgggccc tagcatgcta agccacaaca 4200
gctgctactg gatccagagc agcagcggac tgtggcgccc cggggcttgt accaacatca 4260
ccatgggagt tgtctgcaag ctccctagag tggaagagaa cagcttcttg ccatcagcag 4320
ccctccccga gagcccggtt gccctggtgg tggtgctgac agcggtgctg ctcctcctgg 4380
ccttgatgac ggcagccctc atcctctacc ggcgccgaca gagtgcggag cgtgggtcct 4440
tcgaggggcc ccgctacagt cgcagcagcc actctggccc cgcagaggcc accgagaaga 4500
acattctggt gtctgacatg gaaatgaacg aacagcaaga atagagccaa gggcgtggtc 4560
ggggtggagc caaagcgggg gaggcagg 4588

<210> 305
<211> 1479
<212> PRT
<213> Mouse

<400> 305

Met Val Pro Ile Arg Pro Ala Leu Ala Pro Trp Pro Arg His Leu Leu
1 5 10 15
Arg Cys Val Leu Leu Leu Gly Gly Leu Arg Leu Gly His Pro Ala Asp
20 25 30
Ser Ala Ala Ala Leu Leu Glu Pro Asp Val Phe Leu Ile Phe Ser Gln
35 40 45
Gly Met Gln Gly Cys Leu Glu Ala Gln Gly Val Gln Val Arg Val Thr
50 55 60
Pro Phe Cys Asn Ala Ser Leu Pro Ala Gln Arg Trp Lys Trp Val Ser
65 70 75 80
Arg Asn Arg Leu Phe Asn Leu Gly Ala Thr Gln Cys Leu Gly Thr Gly
85 90 95
Trp Pro Val Thr Asn Thr Thr Val Ser Leu Gly Met Tyr Glu Cys Asp
100 105 110
Arg Glu Ala Leu Ser Leu Arg Met Ala Val Ser Tyr Thr Arg Gly Pro
115 120 125
Val Val Pro Ala Ser Gly Gly Ser Cys Lys Gln Cys Ile Gln Ala Trp
130 135 140
His Leu Glu Arg Gly Asp Gln Thr Arg Ser Gly His Trp Asn Ile Tyr
145 150 155 160
Gly Ser Glu Glu Asp Leu Cys Ala Arg Pro Tyr Tyr Glu Val Tyr Thr
165 170 175
Ile Gln Gly Asn Ser His Gly Lys Pro Cys Thr Ile Pro Phe Lys Tyr
180 185 190
Asp Asn Gln Trp Phe His Gly Cys Thr Ser Thr Gly Arg Glu Asp Gly
195 200 205
His Leu Trp Cys Ala Thr Thr Gln Asp Tyr Gly Lys Asp Glu Arg Trp
210 215 220
Gly Phe Cys Pro Ile Lys Ser Asn Asp Cys Glu Thr Phe Trp Asp Lys
225 230 235 240
Asp Gln Leu Thr Asp Ser Cys Tyr Gln Phe Asn Phe Gln Ser Thr Leu
245 250 255

```
Ser Trp Arg Glu Ala Trp Ala Ser Cys Glu Gln Gln Gly Ala Asp Leu
            260                 265                 270
Leu Ser Ile Thr Glu Ile His Glu Gln Thr Tyr Ile Asn Gly Leu Leu
        275                 280                 285
Thr Gly Tyr Ser Ser Thr Leu Trp Ile Gly Leu Asn Asp Leu Asp Thr
    290                 295                 300
Ser Gly Gly Trp Gln Trp Ser Asp Asn Ser Pro Leu Lys Tyr Leu Asn
305                 310                 315                 320
Trp Glu Ser Asp Gln Pro Asp Asn Pro Gly Glu Glu Asn Cys Gly Val
                325                 330                 335
Ile Arg Thr Glu Ser Ser Gly Gly Trp Gln Asn His Asp Cys Ser Ile
            340                 345                 350
Ala Leu Pro Tyr Val Cys Lys Lys Lys Pro Asn Ala Thr Val Glu Pro
        355                 360                 365
Ile Gln Pro Asp Arg Trp Thr Asn Val Lys Val Glu Cys Asp Pro Ser
    370                 375                 380
Trp Gln Pro Phe Gln Gly His Cys Tyr Arg Leu Gln Ala Glu Lys Arg
385                 390                 395                 400
Ser Trp Gln Glu Ser Lys Arg Ala Cys Leu Arg Gly Gly Gly Asp Leu
                405                 410                 415
Leu Ser Ile His Ser Met Ala Glu Leu Glu Phe Ile Thr Lys Gln Ile
            420                 425                 430
Lys Gln Glu Val Glu Glu Leu Trp Ile Gly Leu Asn Asp Leu Lys Leu
        435                 440                 445
Gln Met Asn Phe Glu Trp Ser Asp Gly Ser Leu Val Ser Phe Thr His
    450                 455                 460
Trp His Pro Phe Glu Pro Asn Asn Phe Arg Asp Ser Leu Glu Asp Cys
465                 470                 475                 480
Val Thr Ile Trp Gly Pro Glu Gly Arg Trp Asn Asp Ser Pro Cys Asn
                485                 490                 495
Gln Ser Leu Pro Ser Ile Cys Lys Lys Ala Gly Arg Leu Ser Gln Gly
            500                 505                 510
Ala Ala Glu Glu Asp His Asp Cys Arg Lys Gly Trp Thr Trp His Ser
        515                 520                 525
Pro Ser Cys Tyr Trp Leu Gly Glu Asp Gln Val Ile Tyr Ser Asp Ala
    530                 535                 540
Arg Arg Leu Cys Thr Asp His Gly Ser Gln Leu Val Thr Ile Thr Asn
545                 550                 555                 560
Arg Phe Glu Gln Ala Phe Val Ser Ser Leu Ile Tyr Asn Trp Glu Gly
                565                 570                 575
Glu Tyr Phe Trp Thr Ala Leu Gln Asp Leu Asn Ser Thr Gly Ser Phe
            580                 585                 590
Arg Trp Leu Ser Gly Asp Glu Val Ile Tyr Thr His Trp Asn Arg Asp
        595                 600                 605
Gln Pro Gly Tyr Arg Arg Gly Gly Cys Val Ala Leu Ala Thr Gly Ser
    610                 615                 620
Ala Met Gly Leu Trp Glu Val Lys Asn Cys Thr Ser Phe Arg Ala Arg
625                 630                 635                 640
Tyr Ile Cys Arg Gln Ser Leu Gly Thr Pro Val Thr Pro Glu Leu Pro
                645                 650                 655
Gly Pro Asp Pro Thr Pro Ser Leu Thr Gly Ser Cys Pro Gln Gly Trp
            660                 665                 670
Val Ser Asp Pro Lys Leu Arg His Cys Tyr Lys Val Phe Ser Ser Glu
        675                 680                 685
Arg Leu Gln Glu Lys Lys Ser Trp Ile Gln Ala Leu Gly Val Cys Arg
    690                 695                 700
Glu Leu Gly Ala Gln Leu Leu Ser Leu Ala Ser Tyr Glu Glu Glu His
705                 710                 715                 720
Phe Val Ala His Met Leu Asn Lys Ile Phe Gly Glu Ser Glu Pro Glu
                725                 730                 735
Ser His Glu Gln His Trp Phe Trp Ile Gly Leu Asn Arg Arg Asp Pro
```

```
            740                 745                 750
Arg Glu Gly His Ser Trp Arg Trp Ser Asp Gly Leu Gly Phe Ser Tyr
        755                 760                 765
His Asn Phe Ala Arg Ser Arg His Asp Asp Asp Asp Ile Arg Gly Cys
    770                 775                 780
Ala Val Leu Asp Leu Ala Ser Leu Gln Trp Val Pro Met Gln Cys Gln
785                 790                 795                 800
Thr Gln Leu Asp Trp Ile Cys Lys Ile Pro Arg Gly Val Asp Val Arg
                805                 810                 815
Glu Pro Asp Ile Gly Arg Gln Gly Arg Leu Glu Trp Val Arg Phe Gln
            820                 825                 830
Glu Ala Glu Tyr Lys Phe Phe Glu His His Ser Ser Trp Ala Gln Ala
        835                 840                 845
Gln Arg Ile Cys Thr Trp Phe Gln Ala Asp Leu Thr Ser Val His Ser
    850                 855                 860
Gln Ala Glu Leu Gly Phe Leu Gly Gln Asn Leu Gln Lys Leu Ser Ser
865                 870                 875                 880
Asp Gln Glu Gln His Trp Trp Ile Gly Leu His Thr Leu Glu Ser Asp
                885                 890                 895
Gly Arg Phe Arg Trp Thr Asp Gly Ser Ile Ile Asn Phe Ile Ser Trp
            900                 905                 910
Ala Pro Gly Lys Pro Arg Pro Ile Gly Lys Asp Lys Lys Cys Val Tyr
        915                 920                 925
Met Thr Ala Arg Gln Glu Asp Trp Gly Asp Gln Arg Cys His Thr Ala
    930                 935                 940
Leu Pro Tyr Ile Cys Lys Arg Ser Asn Ser Ser Gly Glu Thr Gln Pro
945                 950                 955                 960
Gln Asp Leu Pro Pro Ser Ala Leu Gly Gly Cys Pro Ser Gly Trp Asn
                965                 970                 975
Gln Phe Leu Asn Lys Cys Phe Arg Ile Gln Gly Gln Asp Pro Gln Asp
            980                 985                 990
Arg Val Lys Trp Ser Glu Ala Gln Phe Ser Cys Glu Gln Gln Glu Ala
        995                 1000                1005
Gln Leu Val Thr Ile Ala Asn Pro Leu Glu Gln Ala Phe Ile Thr Ala
    1010                1015                1020
Ser Leu Pro Asn Val Thr Phe Asp Leu Trp Ile Gly Leu His Ala Ser
1025                1030                1035                1040
Gln Arg Asp Phe Gln Trp Ile Glu Gln Glu Pro Leu Leu Tyr Thr Asn
                1045                1050                1055
Trp Ala Pro Gly Glu Pro Ser Gly Pro Ser Pro Ala Pro Ser Gly Thr
            1060                1065                1070
Lys Pro Thr Ser Cys Ala Val Ile Leu His Ser Pro Ser Ala His Phe
        1075                1080                1085
Thr Gly Arg Trp Asp Asp Arg Ser Cys Thr Glu Glu Thr His Gly Phe
    1090                1095                1100
Ile Cys Gln Lys Gly Thr Asp Pro Ser Leu Ser Pro Ser Pro Ala Ala
1105                1110                1115                1120
Thr Pro Pro Ala Pro Gly Ala Glu Leu Ser Tyr Leu Asn His Thr Phe
                1125                1130                1135
Arg Leu Leu Gln Lys Pro Leu Arg Trp Lys Asp Ala Leu Leu Leu Cys
            1140                1145                1150
Glu Ser Arg Asn Ala Ser Leu Ala His Val Pro Asp Pro Tyr Thr Gln
        1155                1160                1165
Ala Phe Leu Thr Gln Ala Ala Arg Gly Leu Gln Thr Pro Leu Trp Ile
    1170                1175                1180
Gly Leu Ala Ser Glu Glu Gly Ser Arg Arg Tyr Ser Trp Leu Ser Glu
1185                1190                1195                1200
Glu Pro Leu Asn Tyr Val Ser Trp Gln Asp Glu Glu Pro Gln His Ser
                1205                1210                1215
Gly Gly Cys Ala Tyr Val Asp Val Asp Gly Thr Trp Arg Thr Thr Ser
            1220                1225                1230
```

Cys Asp Thr Lys Leu Gln Gly Ala Val Cys Gly Val Ser Arg Gly Pro
1235 1240 1245
Pro Pro Arg Arg Ile Asn Tyr Arg Gly Ser Cys Pro Gln Gly Leu Ala
1250 1255 1260
Asp Ser Ser Trp Ile Pro Phe Arg Glu His Cys Tyr Ser Phe His Met
1265 1270 1275 1280
Glu Val Leu Leu Gly His Lys Glu Ala Leu Gln Arg Cys Gln Lys Ala
1285 1290 1295
Gly Gly Thr Val Leu Ser Ile Leu Asp Glu Met Glu Asn Val Phe Val
1300 1305 1310
Trp Glu His Leu Gln Thr Ala Glu Ala Gln Ser Arg Gly Ala Trp Leu
1315 1320 1325
Gly Met Asn Phe Asn Pro Lys Gly Gly Thr Leu Val Trp Gln Asp Asn
1330 1335 1340
Thr Ala Val Asn Tyr Ser Asn Trp Gly Pro Pro Gly Leu Gly Pro Ser
1345 1350 1355 1360
Met Leu Ser His Asn Ser Cys Tyr Trp Ile Gln Ser Ser Ser Gly Leu
1365 1370 1375
Trp Arg Pro Gly Ala Cys Thr Asn Ile Thr Met Gly Val Val Cys Lys
1380 1385 1390
Leu Pro Arg Val Glu Glu Asn Ser Phe Leu Pro Ser Ala Ala Leu Pro
1395 1400 1405
Glu Ser Pro Val Ala Leu Val Val Val Leu Thr Ala Val Leu Leu Leu
1410 1415 1420
Leu Ala Leu Met Thr Ala Ala Leu Ile Leu Tyr Arg Arg Arg Gln Ser
1425 1430 1435 1440
Ala Glu Arg Gly Ser Phe Glu Gly Ala Arg Tyr Ser Arg Ser Ser His
1445 1450 1455
Ser Gly Pro Ala Glu Ala Thr Glu Lys Asn Ile Leu Val Ser Asp Met
1460 1465 1470
Glu Met Asn Glu Gln Gln Glu
1475

<210> 306
<211> 3987
<212> DNA
<213> Rat

<400> 306
agtatggaga gaaggtcgtt taaaaaggca gatgtccctt taaggtttgc tttgctgctg 60
cccgtggact ttagcctaaa cagggtcccg cgaagttggc tttatttgtc catgtctcgg 120
acacagcctg ggtagctgcc agtgagattt cagggacgga gcgcgcaaag gggggggaaa 180
tgtggcaatc catctgggat gtgagacgcg tggagagggc ttagcagcat ttgaccaaaa 240
cacaggaaat cactcctcca cagctcctgg gcgcagcagc ggctggggcc actgccggac 300
accctcggag accacacgag tgacccagag cgcaagtcgc cagcgtcccg gttctgcctg 360
ttcctgccag ctcctgccca cgaaccggca cgtagctggt tccagcagcc gctccagcaa 420
tggtccccag gcgtcctgcc agcctagagg tcactgtagc ctgcatatgg cttctcacgg 480
tcatcctagg cttctgcgtc tccttcaatg ttgatgtgaa aaactcaatg agtttcagtg 540
gcccagtaga ggacatgttt ggatacactg ttcaacaata tgaaaacgaa gaaggcaaat 600
gggttcttat tggttctcct ttagttggcc aacccaaagc aagaactgga gatgtctata 660
agtgtccggt tgggagagag agagcaatgc cttgcgtgaa gttggacttg ccagttaaca 720
catcgatccc caatgtcaca gaaataaagg aaaacatgac atttggatca actttagtca 780
ccaacccgaa tggaggattt ctggcatgtg ggcccttgta tgcctataga tgtggacatt 840
tgcattatac aactggaata tgttctgatg tcagtcctac atttcaagtt gtgaactcct 900
ttgcccctgt acaagaatgc agcacccagc tggacatagt catcgtcctg gatggctcca 960
acagcatcta cccctgggaa agtgtcatcg ccttttaaa cgaccttctt aagaggatgg 1020
atattggccc taagcagaca caggtcggga ttgtacagta tggagagaat gtaacccatg 1080
agttcaacct caataagtat tcatccacag aagaggtcct tgtcgcagca aacaaaatag 1140
gccgacaggg aggcctccaa acgatgacag cccttggaat agacacagcc aggaaagagg 1200
cattcactga agctcggggt gccaggaggg gagttaaaaa agtcatggtt attgtgaccg 1260
acggagaatc gcatgacaac tatcgcctga aacaggtcat ccaagactgc gaggacgaaa 1320

```
acattcagcg attttccata gctatccttg gccactataa caggggaac ttaagcactg    1380
aaaaatttgt ggaggaaata aaatcgatcg caagcgagcc cacggaaaag cacttcttca    1440
atgtctcgga tgagttggcc ctggtcacta ttgttaaagc tctgggagaa aggatattcg    1500
ctttggaagc gacagctgac cagtcagcag cttcatttga gatggaaatg tctcagactg    1560
gcttcagtgc tcactactcc caggactggg tcatgcttgg agcggtggga gcctatgact    1620
ggaacggaac tgtggtcatg cagaaggcta accagatggt catccctcat aacaccacct    1680
ttcaaactga gcccgccaag atgaacgagc ctctggcttc ttatttaggt tacacagtga    1740
actcggccac catccctgga gatgtgctct acatcgctgg gcagcctcgg tacaatcata    1800
cgggccaggt cgtcatctac aagatggagg atgggaacat caacattctg cagacactcg    1860
gcggagagca gattggttcc tactttggta gtgtcttaac aacaattgac atcgacaaag    1920
attcttatac tgatctgctt ctcgtcgggg cccccatgta catggggaca gagaaagagg    1980
aacagggcaa ggtgtacgtg tacgctgtga atcagacaag gtttgaatat caaatgagcc    2040
tggaaccaat taggcagacc tgctgctcat ccctgaagga taattcatgc acgaaagaaa    2100
acaagaatga gccctgcggg gcccgcttcg gaacagcaat tgctgctgta aaagacctca    2160
acgtggatgg atttaatgac gtcgtgattg gagctccgct ggaagatgac cacgcaggag    2220
ctgtgtacat ttatcatggc agtggcaaga ccataaggga ggcgtatgca caacgcattc    2280
catcaggtgg ggatggcaag accctgaaat ttttcggcca gtctatccac ggagagatgg    2340
atttaaatgg tgacggtctg actgacgtga ccattggagg ccttggtgga gcagccctct    2400
tctgggccag agatgtggct gtagttaaag tgaccatgaa ttttgaaccc aataaagtga    2460
atattcaaaa gaaaaactgc cgtgtggagg gcaaagaaac agtgtgcata aatgctacaa    2520
tgtgttttca tgtgaaatta aagtctaaag aggactcaat ttacgaggct gatctgcagt    2580
accgtgtcac ccttgattca ctgaggcaga tatcacggag ctttttttct ggaactcagg    2640
aaaggaagat tcaaagaaat atcaccgttc gagaatcaga atgcatcagg cactccttct    2700
acatgttgga caaacatgac tttcaggact ctgtgagagt gactctggat tttaatctca    2760
ctgatccaga aaatggtcct gtacttgatg acgctctgcc aaactcagtc cacgaacaca    2820
ttccctttgc caaagactgt ggaaacaagg aaagatgcat ttcagacctc actctgaatg    2880
tgtccaccac agaaaagagc ctgctgatcg tcaagtccca gcatgacaag ttcaacgtta    2940
gcctcaccgt caaaaacaaa ggagacagtg cgtacaacac caggacagtg gtgcagcatt    3000
caccaaatct gatttttttcg ggaattgagg agatccaaaa agatagctgt gaatctaatc    3060
aaaatatcac ttgcagagtt ggatatcctt tcctaagagc aggagaaacg gttaccttca    3120
aaataatatt ccagtttaac acatcccatc tctcggaaaa tgcaatcatt cacttaagtg    3180
caacaagtga cagtgaggag cccctggaat ctcttaatga taatgaagta aatatttcca    3240
tcccagtaaa atatgaagtt ggactgcagt tttacagttc tgcgagtgaa catcacattt    3300
cagtcgctgc caatgagacg atccctgagt ttattaactc cactgaggac attgggaatg    3360
aaattaatgt cttctatacg attagaaaga gggggcattt cccaatgcca gaacttcagc    3420
tgtcaatttc attccccaat ttgacggcag atggttatcc tgtactgtac ccaattggat    3480
ggtcatcttc agataatgtg aactgtagac cccggagcct tgaggacccc tttggcatca    3540
actctgggaa gaaaatgaca atatcgaagt ctgaggttct caaaagaggc acaatccagg    3600
actgcagtag tacgtgtgga gttgccacca tcacgtgtag cctccttcct tccgacctga    3660
gtcaagtgaa tgtctcgctc ctcctgtgga aaccgacttt cataagagca catttttcca    3720
gcttaaacct tactctaaga ggagaactta agagtgaaaa ttcatcgctg actttaagta    3780
gcagcaaccg gaagcgagag ctggctattc agatatccaa agacgggctc ccaggcagag    3840
tgccgctgtg ggttatcctc ctgagcgcct tcgcggggct actgctgcta atgctcctta    3900
tattggctct gtggaagatt ggattcttca aaaggccact gaagaagaaa atggagaaat    3960
gaaaggtttc atagaaaaaa aaaaaaa                                        3987
```

<210> 307
<211> 1180
<212> PRT
<213> Rat

<400> 307

```
Met Val Pro Arg Arg Pro Ala Ser Leu Glu Val Thr Val Ala Cys Ile
 1               5                  10                  15
Trp Leu Leu Thr Val Ile Leu Gly Phe Cys Val Ser Phe Asn Val Asp
            20                  25                  30
Val Lys Asn Ser Met Ser Phe Ser Gly Pro Val Glu Asp Met Phe Gly
        35                  40                  45
Tyr Thr Val Gln Gln Tyr Glu Asn Glu Glu Gly Lys Trp Val Leu Ile
    50                  55                  60
Gly Ser Pro Leu Val Gly Gln Pro Lys Ala Arg Thr Gly Asp Val Tyr
```

```
65                  70                  75                  80
Lys Cys Pro Val Gly Arg Glu Arg Ala Met Pro Cys Val Lys Leu Asp
                85                  90                  95
Leu Pro Val Asn Thr Ser Ile Pro Asn Val Thr Glu Ile Lys Glu Asn
            100                 105                 110
Met Thr Phe Gly Ser Thr Leu Val Thr Asn Pro Asn Gly Gly Phe Leu
        115                 120                 125
Ala Cys Gly Pro Leu Tyr Ala Tyr Arg Cys Gly His Leu His Tyr Thr
    130                 135                 140
Thr Gly Ile Cys Ser Asp Val Ser Pro Thr Phe Gln Val Val Asn Ser
145                 150                 155                 160
Phe Ala Pro Val Gln Glu Cys Ser Thr Gln Leu Asp Ile Val Ile Val
                165                 170                 175
Leu Asp Gly Ser Asn Ser Ile Tyr Pro Trp Glu Ser Val Ile Ala Phe
            180                 185                 190
Leu Asn Asp Leu Leu Lys Arg Met Asp Ile Gly Pro Lys Gln Thr Gln
        195                 200                 205
Val Gly Ile Val Gln Tyr Gly Glu Asn Val Thr His Glu Phe Asn Leu
    210                 215                 220
Asn Lys Tyr Ser Ser Thr Glu Glu Val Leu Val Ala Ala Asn Lys Ile
225                 230                 235                 240
Gly Arg Gln Gly Gly Leu Gln Thr Met Thr Ala Leu Gly Ile Asp Thr
                245                 250                 255
Ala Arg Lys Glu Ala Phe Thr Glu Ala Arg Gly Ala Arg Arg Gly Val
            260                 265                 270
Lys Lys Val Met Val Ile Val Thr Asp Gly Glu Ser His Asp Asn Tyr
        275                 280                 285
Arg Leu Lys Gln Val Ile Gln Asp Cys Glu Asp Glu Asn Ile Gln Arg
    290                 295                 300
Phe Ser Ile Ala Ile Leu Gly His Tyr Asn Arg Gly Asn Leu Ser Thr
305                 310                 315                 320
Glu Lys Phe Val Glu Glu Ile Lys Ser Ile Ala Ser Glu Pro Thr Glu
                325                 330                 335
Lys His Phe Phe Asn Val Ser Asp Glu Leu Ala Leu Val Thr Ile Val
            340                 345                 350
Lys Ala Leu Gly Glu Arg Ile Phe Ala Leu Glu Ala Thr Ala Asp Gln
        355                 360                 365
Ser Ala Ala Ser Phe Glu Met Glu Met Ser Gln Thr Gly Phe Ser Ala
    370                 375                 380
His Tyr Ser Gln Asp Trp Val Met Leu Gly Ala Val Gly Ala Tyr Asp
385                 390                 395                 400
Trp Asn Gly Thr Val Val Met Gln Lys Ala Asn Gln Met Val Ile Pro
                405                 410                 415
His Asn Thr Thr Phe Gln Thr Glu Pro Ala Lys Met Asn Glu Pro Leu
            420                 425                 430
Ala Ser Tyr Leu Gly Tyr Thr Val Asn Ser Ala Thr Ile Pro Gly Asp
        435                 440                 445
Val Leu Tyr Ile Ala Gly Gln Pro Arg Tyr Asn His Thr Gly Gln Val
    450                 455                 460
Val Ile Tyr Lys Met Glu Asp Gly Asn Ile Asn Ile Leu Gln Thr Leu
465                 470                 475                 480
Gly Gly Glu Gln Ile Gly Ser Tyr Phe Gly Ser Val Leu Thr Thr Ile
                485                 490                 495
Asp Ile Asp Lys Asp Ser Tyr Thr Asp Leu Leu Leu Val Gly Ala Pro
            500                 505                 510
Met Tyr Met Gly Thr Glu Lys Glu Glu Gln Gly Lys Val Tyr Val Tyr
        515                 520                 525
Ala Val Asn Gln Thr Arg Phe Glu Tyr Gln Met Ser Leu Glu Pro Ile
    530                 535                 540
Arg Gln Thr Cys Cys Ser Ser Leu Lys Asp Asn Ser Cys Thr Lys Glu
545                 550                 555                 560
```

```
Asn Lys Asn Glu Pro Cys Gly Ala Arg Phe Gly Thr Ala Ile Ala Ala
                565                 570                 575
Val Lys Asp Leu Asn Val Asp Gly Phe Asn Asp Val Val Ile Gly Ala
            580                 585                 590
Pro Leu Glu Asp Asp His Ala Gly Ala Val Tyr Ile Tyr His Gly Ser
        595                 600                 605
Gly Lys Thr Ile Arg Glu Ala Tyr Ala Gln Arg Ile Pro Ser Gly Gly
    610                 615                 620
Asp Gly Lys Thr Leu Lys Phe Phe Gly Gln Ser Ile His Gly Glu Met
625                 630                 635                 640
Asp Leu Asn Gly Asp Gly Leu Thr Asp Val Thr Ile Gly Gly Leu Gly
                645                 650                 655
Gly Ala Ala Leu Phe Trp Ala Arg Asp Val Ala Val Val Lys Val Thr
            660                 665                 670
Met Asn Phe Glu Pro Asn Lys Val Asn Ile Gln Lys Lys Asn Cys Arg
        675                 680                 685
Val Glu Gly Lys Glu Thr Val Cys Ile Asn Ala Thr Met Cys Phe His
    690                 695                 700
Val Lys Leu Lys Ser Lys Glu Asp Ser Ile Tyr Glu Ala Asp Leu Gln
705                 710                 715                 720
Tyr Arg Val Thr Leu Asp Ser Leu Arg Gln Ile Ser Arg Ser Phe Phe
                725                 730                 735
Ser Gly Thr Gln Glu Arg Lys Ile Gln Arg Asn Ile Thr Val Arg Glu
            740                 745                 750
Ser Glu Cys Ile Arg His Ser Phe Tyr Met Leu Asp Lys His Asp Phe
        755                 760                 765
Gln Asp Ser Val Arg Val Thr Leu Asp Phe Asn Leu Thr Asp Pro Glu
    770                 775                 780
Asn Gly Pro Val Leu Asp Asp Ala Leu Pro Asn Ser Val His Glu His
785                 790                 795                 800
Ile Pro Phe Ala Lys Asp Cys Gly Asn Lys Glu Arg Cys Ile Ser Asp
                805                 810                 815
Leu Thr Leu Asn Val Ser Thr Thr Glu Lys Ser Leu Leu Ile Val Lys
            820                 825                 830
Ser Gln His Asp Lys Phe Asn Val Ser Leu Thr Val Lys Asn Lys Gly
        835                 840                 845
Asp Ser Ala Tyr Asn Thr Arg Thr Val Val Gln His Ser Pro Asn Leu
    850                 855                 860
Ile Phe Ser Gly Ile Glu Glu Ile Gln Lys Asp Ser Cys Glu Ser Asn
865                 870                 875                 880
Gln Asn Ile Thr Cys Arg Val Gly Tyr Pro Phe Leu Arg Ala Gly Glu
                885                 890                 895
Thr Val Thr Phe Lys Ile Ile Phe Gln Phe Asn Thr Ser His Leu Ser
            900                 905                 910
Glu Asn Ala Ile Ile His Leu Ser Ala Thr Ser Asp Ser Glu Glu Pro
        915                 920                 925
Leu Glu Ser Leu Asn Asp Asn Glu Val Asn Ile Ser Ile Pro Val Lys
    930                 935                 940
Tyr Glu Val Gly Leu Gln Phe Tyr Ser Ser Ala Ser Glu His His Ile
945                 950                 955                 960
Ser Val Ala Ala Asn Glu Thr Ile Pro Glu Phe Ile Asn Ser Thr Glu
                965                 970                 975
Asp Ile Gly Asn Glu Ile Asn Val Phe Tyr Thr Ile Arg Lys Arg Gly
            980                 985                 990
His Phe Pro Met Pro Glu Leu Gln Leu Ser Ile Ser Phe Pro Asn Leu
        995                 1000                1005
Thr Ala Asp Gly Tyr Pro Val Leu Tyr Pro Ile Gly Trp Ser Ser Ser
    1010                1015                1020
Asp Asn Val Asn Cys Arg Pro Arg Ser Leu Glu Asp Pro Phe Gly Ile
1025                1030                1035                1040
Asn Ser Gly Lys Lys Met Thr Ile Ser Lys Ser Glu Val Leu Lys Arg
```

1045 1050 1055
Gly Thr Ile Gln Asp Cys Ser Ser Thr Cys Gly Val Ala Thr Ile Thr
1060 1065 1070
Cys Ser Leu Leu Pro Ser Asp Leu Ser Gln Val Asn Val Ser Leu Leu
1075 1080 1085
Leu Trp Lys Pro Thr Phe Ile Arg Ala His Phe Ser Ser Leu Asn Leu
1090 1095 1100
Thr Leu Arg Gly Glu Leu Lys Ser Glu Asn Ser Ser Leu Thr Leu Ser
1105 1110 1115 1120
Ser Ser Asn Arg Lys Arg Glu Leu Ala Ile Gln Ile Ser Lys Asp Gly
1125 1130 1135
Leu Pro Gly Arg Val Pro Leu Trp Val Ile Leu Leu Ser Ala Phe Ala
1140 1145 1150
Gly Leu Leu Leu Leu Met Leu Leu Ile Leu Ala Leu Trp Lys Ile Gly
1155 1160 1165
Phe Phe Lys Arg Pro Leu Lys Lys Lys Met Glu Lys
1170 1175 1180

<210> 308
<211> 10
<212> DNA
<213> Homo sapiens

<400> 308
gatctccgtg 10

<210> 309
<211> 17
<212> DNA
<213> Homo sapiens

<400> 309
ggggctgccc agctgga 17

<210> 310
<211> 17
<212> DNA
<213> Homo sapiens

<400> 310
catttttatc tactgtc 17

<210> 311
<211> 17
<212> DNA
<213> Homo sapiens

<400> 311
ctttctttga gttttaa 17

<210> 312
<211> 17
<212> DNA
<213> Homo sapiens

<400> 312
tattaactct ctttgga 17

<210> 313
<211> 17
<212> DNA

<213> Homo sapiens

<400> 313
tattaactct ctttggg 17

<210> 314
<211> 17
<212> DNA
<213> Homo sapiens

<400> 314
caggagaccc caggccc 17

<210> 315
<211> 17
<212> DNA
<213> Homo sapiens

<400> 315
ggaaatgtca gcaagta 17

<210> 316
<211> 17
<212> DNA
<213> Homo sapiens

<400> 316
cctggttcag tctccac 17

<210> 317
<211> 17
<212> DNA
<213> Homo sapiens

<400> 317
tttttaagaa ctcgggt 17

<210> 318
<211> 17
<212> DNA
<213> Homo sapiens

<400> 318
tttggttttc caaaaaa 17

<210> 319
<211> 17
<212> DNA
<213> Homo sapiens

<400> 319
tttggttttc caaaaga 17

<210> 320
<211> 17
<212> DNA
<213> Homo sapiens

<400> 320
tttggttttc caaaagc 17

<210> 321
<211> 17
<212> DNA
<213> Homo sapiens

<400> 321 17
attttgtatg attttta

<210> 322
<211> 17
<212> DNA
<213> Homo sapiens

<400> 322 17
actttagatg ggaagcc

<210> 323
<211> 17
<212> DNA
<213> Homo sapiens

<400> 323 17
gagtgagacc caggaga

<210> 324
<211> 17
<212> DNA
<213> Homo sapiens

<400> 324 17
gagtgagacc caggagc

<210> 325
<211> 17
<212> DNA
<213> Homo sapiens

<400> 325 17
gtacacacac ccccacc

<210> 326
<211> 17
<212> DNA
<213> Homo sapiens

<400> 326 17
ccacagggga attcggg

<210> 327
<211> 17
<212> DNA
<213> Homo sapiens

<400> 327 17
ccacagggga ttctcct

<210> 328
<211> 17
<212> DNA
<213> Homo sapiens

<400> 328
ttaaaagtca ctgtgca 17

<210> 329
<211> 17
<212> DNA
<213> Homo sapiens

<400> 329
acagactgtt agccaag 17

<210> 330
<211> 17
<212> DNA
<213> Homo sapiens

<400> 330
ctataggaga ctgggca 17

<210> 331
<211> 17
<212> DNA
<213> Homo sapiens

<400> 331
taccacctcc ctttcct 17

<210> 332
<211> 17
<212> DNA
<213> Homo sapiens

<400> 332
taccacctcc gttgtat 17

<210> 333
<211> 17
<212> DNA
<213> Homo sapiens

<400> 333
gcccttctc cgtagtt 17

<210> 334
<211> 17
<212> DNA
<213> Homo sapiens

<400> 334
gcccttctc tgtagtt 17

<210> 335
<211> 17
<212> DNA
<213> Homo sapiens

<400> 335
ttaaatagca cctttag 17

<210> 336
<211> 17

<212> DNA
<213> Homo sapiens

<400> 336
agacatactg acagaat 17

<210> 337
<211> 17
<212> DNA
<213> Homo sapiens

<400> 337
tcccccagga gccacca 17

<210> 338
<211> 17
<212> DNA
<213> Homo sapiens

<400> 338
tcccccagga gccaccg 17

<210> 339
<211> 17
<212> DNA
<213> Homo sapiens

<400> 339
tacaaatcgt tgtcaaa 17

<210> 340
<211> 17
<212> DNA
<213> Homo sapiens

<400> 340
cattatccaa aaacaat 17

<210> 341
<211> 17
<212> DNA
<213> Homo sapiens

<400> 341
agaaaccacg gaaatgg 17

<210> 342
<211> 17
<212> DNA
<213> Homo sapiens

<400> 342
accaaaacca aataggg 17

<210> 343
<211> 17
<212> DNA
<213> Homo sapiens

<400> 343
tgaaataaac ccagttt 17

<210> 344
<211> 17
<212> DNA
<213> Homo sapiens

<400> 344
tgaaataaac tcagtat 17

<210> 345
<211> 17
<212> DNA
<213> Homo sapiens

<400> 345
gtggagacgg actctgt 17

<210> 346
<211> 17
<212> DNA
<213> Homo sapiens

<400> 346
tttgtgttgt atattta 17

<210> 347
<211> 17
<212> DNA
<213> Homo sapiens

<400> 347
ttatgtttaa tagttga 17

<210> 348
<211> 17
<212> DNA
<213> Homo sapiens

<400> 348
tggaaatgac ccaaaaa 17

<210> 349
<211> 17
<212> DNA
<213> Homo sapiens

<400> 349
tggaaatgac ccaacgc 17

<210> 350
<211> 17
<212> DNA
<213> Homo sapiens

<400> 350
tgccacacag tgacttg 17

<210> 351
<211> 17
<212> DNA
<213> Homo sapiens

<400> 351
gatgaggaga ctggcaa 17

<210> 352
<211> 17
<212> DNA
<213> Homo sapiens

<400> 352
atcaaaggtt tgattta 17

<210> 353
<211> 17
<212> DNA
<213> Homo sapiens

<400> 353
agtcacatag tacataa 17

<210> 354
<211> 17
<212> DNA
<213> Homo sapiens

<400> 354
ttcggttggt caaagat 17

<210> 355
<211> 17
<212> DNA
<213> Homo sapiens

<400> 355
ccccacacgg gcaagca 17

<210> 356
<211> 17
<212> DNA
<213> Homo sapiens

<400> 356
ggcttgcctt tttgtat 17

<210> 357
<211> 17
<212> DNA
<213> Homo sapiens

<400> 357
atcccttccc gccacac 17

<210> 358
<211> 69
<212> PRT
<213> Homo sapiens

<400> 358

Ser	Leu	Gly	Asp	Arg	Val	Arg	Leu	Ser	Pro	Lys	Lys	Arg	Lys	Lys	Val
1				5					10					15	
Ile	Gln	Cys	Ser	Phe	Tyr	Arg	Asp	Lys	Arg	Ser	Asn	Ser	Ser	Gly	Trp

```
            20                  25                  30
Val Trp Trp Leu Met Pro Val Ile Pro Thr Leu Trp Glu Ala Lys Ala
        35                  40                  45
Gly Gly Ser His Glu Val Arg Ser Ser Arg Pro Ala Trp Pro Thr Trp
    50                  55                  60
Gln Asn Cys Leu Tyr
65
```